

# **COSMO CITY X55 FILLING STATION**

**PROPOSED FILLING STATION ON PART OF PORTION 2 OF  
THE FARM NIETGEDACHT 535-JQ  
CITY OF JOHANNESBURG METROPOLITAN MUNICIPALITY**

**GAUT 002/21-22/E2994**

## **ENVIRONMENTAL MANAGEMENT PROGRAMME**

**DECEMBER 2021**

**COMPILED BY ENVIRONMENTAL ASSESSMENT PRACTITIONER**



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**FOR APPLICANT**



***Cosmopolitan Projects Johannesburg (Pty) Ltd***

Care of Mr Ian Janse van Rensburg  
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## 1. INTRODUCTION

Note that this Environmental Management Programme (EMPr) should be read and implemented in conjunction with the following documents attached as annexures.

- ❖ *Environmental Impact Assessment Table*
- ❖ *Environmental Authorisation (once issued)*

This EMPr, once accepted/approved by the Gauteng Department of Agriculture and Rural Development (GDARD) (normally approved as part of the Environmental Authorisation) is a legally binding document and must be adhered to during all phases of project development.

### 1.1 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

The Environmental Management Programme (EMPr) has the following objectives:

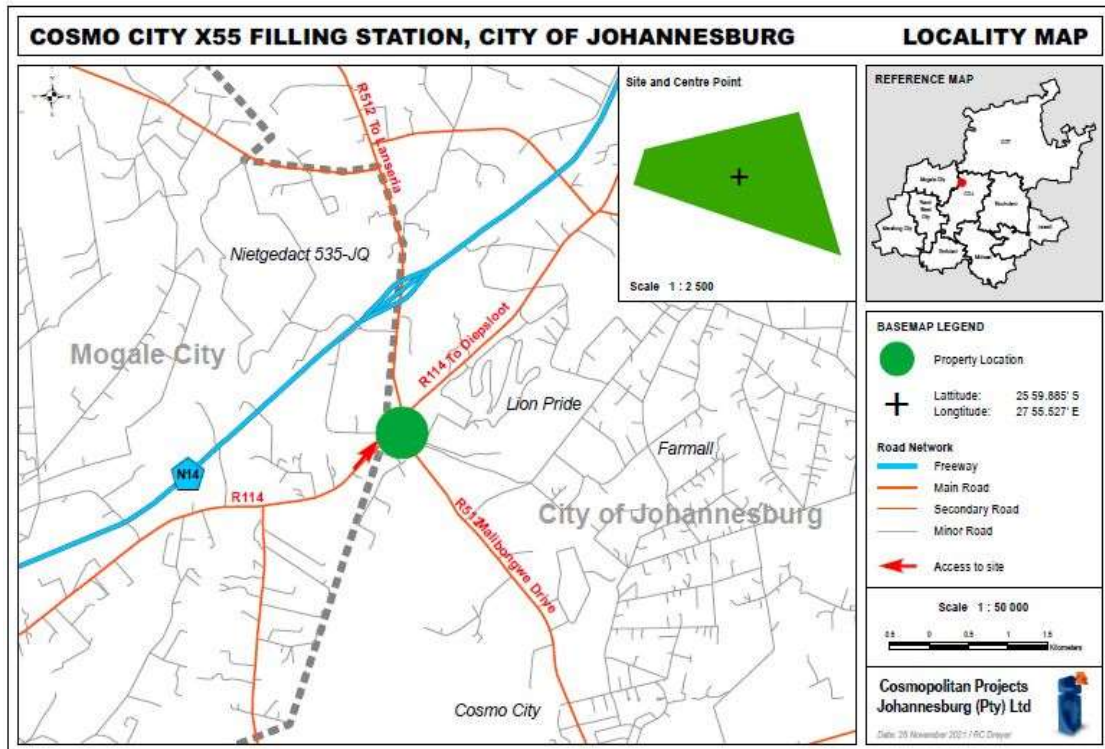
- To state the standards and guidelines which the Applicant will be required to adhere to in terms of environmental legislation;
- To set out the mitigation measures and environmental specifications which the Applicant will be required to implement for the design, construction and implementation phases of the project in order to minimize the extent of environmental impacts, and where possible to improve the condition of the environment;
- To provide guidance regarding the method statements which the Applicant will be required to compile and implement to achieve the environmental specification;
- To define corrective actions which the Applicant must take in the event of non-compliance with the specifications of this EMP;
- To mitigate potential negative impact associated with the project and ensure optimization of positive impact;
- To prevent long-term or permanent environmental degradation;
- To ensure that the applicant, construction workers and the operational and maintenance staff are well acquainted with their responsibilities in terms of the environment;
- To ensure that communication channels to report on environment related issues are in place.

### 1.2 DETAILS OF THE PERSON WHO PREPARED THE EMPR

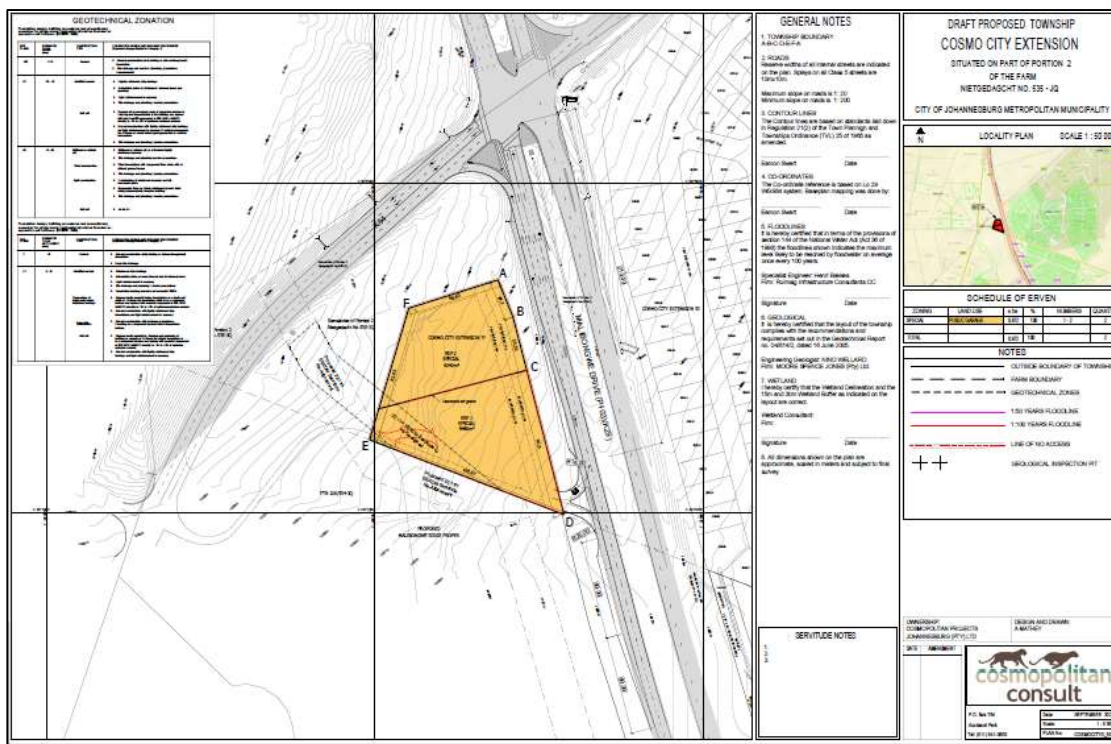
This Environmental Management Programme was prepared by Ms Ronel Dreyer from Isquare Information Systems cc. Contact details are on the cover page of this document and Company Profile and Curriculum Vitae are available on request to [roneld@isquare.co.za](mailto:roneld@isquare.co.za).

### 1.3 DETAILS OF THE PROPOSED ACTIVITY

Proposed Filling Station on Part of Portion 2 of the Farm Nietgedacht 535-JQ, within the jurisdiction of Johannesburg Metropolitan Municipality, Gauteng Province. The proposed filling station area is approximately 0.5753 ha and a maximum total storage capacity of 500 000 litres is required.



The final site layout must be provided in Appendix A of this EMP in an appropriate scale. Below is the concept layout which was provided in the application for Environmental Authorisation.



#### 1.4 DETAILS OF PERSONS RESPONSIBLE FOR IMPLEMENTATION OF EMPR

The Applicant of the proposed Filling Station is:

Cosmopolitan Projects Johannesburg (Pty) Ltd

Contact Person: Mr Ian Janse van Rensburg

Tel No: 087 405 3921

Cell: 082 450 6373

Email: lanJ@cosmopro.co.za

This company is ultimately responsible for the implementation of all requirements in terms of this Environmental Management Programme.

#### 1.5 AGREEMENT & UNDERTAKING OF THE APPLICANT

The Applicant must confirm his knowledge and awareness of the content of this Environmental Management Programme as well as his responsibility to comply with relevant legislation pertaining to the nature of the work to be done.

By submitting this signed document to the Gauteng Department of Agricultural and Rural Development prior to construction as per legal requirement, the Applicant confirms his/her knowledge and awareness of the content of this Environmental Management Programme, as well as his responsibility to comply with relevant legislation pertaining to the nature of the work to be done.

Signed on behalf of: \_\_\_\_\_

Date: \_\_\_\_\_

Place: \_\_\_\_\_

Signature: \_\_\_\_\_

Full Name: \_\_\_\_\_

Physical Address: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Office Telephone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

The Applicant must appoint an Environmental Control Officer (ECO) for the duration of the construction period to ensure that the approved EMs is implemented and enforced where required.

## 1.6 PROPOSED MECHANISM FOR COMPLIANCE

Refer to the *Environmental Impact Assessment Table* included as Annexure B, which provides a site-specific description and assessment of impacts associated with this project, inclusive of the responsible parties.

Key impacts generally associated with environmental impact resulting from filling stations during one or more phases of project development are:

- ***Risk for surface and groundwater pollution:***

There is the potential for spillages during construction (construction vehicles) and during operation spillage resulting from petroleum transfer operations, overflow, etc. could occur)

- ***Traffic Impact:***

Congestion during peak hours could occur and/or safety risk associated with large trucks and tractors from the farming community as well as the petroleum supply company could be relevant.

- ***Community Impact:***

During construction impact is associated with safety and crime risk because of labourers to the area. Impact is however expected to be limited due to limited construction activities required over a relatively short period of time.

During the operational phase community impact is associated with noise; however consider negligent for this project because it is surrounded by mostly light industrial activities and smallholdings.

Crime could increase as a result of the truck stop with limited overnight accommodation.

Health considerations, i.e. in terms of vapour are important to ensure protection of personnel involved with filling of tanks, etc.

- ***Potential Impact on natural habitat:***

This is not relevant to this site because the site had been cleared in the past.

- ***Potential impact on cultural heritage resources:***

This is not relevant to this site because the site had been cleared in the past and no obvious heritage resources and/or artefacts were discovered.

- ***Risk of erosion:***

This impact is generally associated with heavy rainfall area where steep exposed slopes occur. Even though heavy thunderstorms do occur in the project area, erosion is not expected to be significant due to compacted surfaces of a relatively flat site.

Specifications and conditions are hereby provided to limit and/or prevent impact during all the phases of project development, under the following headings:

- Specifications applicable throughout all Phases of Project Development
- Design & Pre-construction Phase
- Construction Phase
- Operational Phase

## **2. SPECIFICATIONS APPLICABLE THROUGHOUT ALL PHASES OF PROJECT DEVELOPMENT**

### **2.1 ROLES AND RESPONSIBILITIES**

The Applicant will

- be responsible for the overall implementation of the Environmental Management Programme
- ensure that all third parties (i.e. Contractors; suppliers, etc.) comply with the requirements of this EMP.

Responsibilities include the following measures in terms of Environmental and Health Training and Awareness; Emergency Preparedness; Spillage and Fire Management,

#### **2.1.1 Environmental and Health Training and Awareness**

The contractor will ensure that its employees are adequately trained with regard to the implementation of the EMP, as well as regarding environmental legal requirements and obligations. It is proposed that all employees should have an induction presentation on environmental awareness. Where possible the presentation will be conducted in the language of the employees.

The environmental training should, as a minimum, include the following:

- The importance of conforming with relevant environmental policies, procedures, plans and systems;
- The significant environmental impacts, actual or potential, which could result from their work activities;
- Implementation of spillage containment emergency plan, including the usage of spill containment kit.
- The environmental benefits of improved personal performance;
- The roles and responsibilities in achieving conformance with the environmental policy and procedures, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures to be implemented when carrying out their work activities;
- The importance of not littering;
- The need to use water sparingly;
- Details of, and encouragement to, minimizing the production of waste and re-use, recover and recycle waste where possible;
- Details regarding archaeological and/or historical sites which may be unearthed during construction as well as the procedures to be followed should these be encountered.

#### **2.1.2 Emergency Preparedness**

- The Contractor and/or the Applicant must ensure that there will be an appropriate response to unexpected and/or accidental actions or incidents that will cause environmental impacts, throughout the life cycle of the project. Such incidents may include, inter alia:
  - Accidental discharges to water and land;
  - Accidental exposure of employees to hazardous substances;
  - Accidental veld fires;
  - Accidental spillage of hazardous substances;
  - Specific environmental and ecosystem effects from accidental releases or incidents
- Construction and permanent employees shall be adequately trained in terms of incidents and emergency situations.
- An emergency preparedness plan will include details of the organization (manpower) and responsibilities, accountability and liability of personnel.
- The emergency preparedness plan shall include a list of key personnel.
- Details of emergency services (e.g. the fire department, spill clean-up services, etc.) shall be listed.
- Internal and external communication plans, including prescribed reporting procedures shall be listed.
- Actions to be taken in the event of different types of emergencies shall be included.
- All major and minor incidents should be documented and made available to all relevant role players on site.



- Incident management protocols should include considerations for air, groundwater, soil and surface water.
- Spill clean-up kits and absorbent material must be kept on site to assist in immediate clean-up of any hazardous material spillages.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release shall be listed.
- Training plans, testing exercises, and schedules for effectiveness shall be included.
- The Contractor and the Applicant will comply with the emergency preparedness, and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended, and/or any other relevant legislation.

## 2.2 COMPLIANCE WITH RELEVANT LEGAL REQUIREMENT

Legal requirement directly related to this Environmental Management Programme is summarised below:

### 2.2.1 *National Environmental Management Act (Act 107 of 1998)*

An application for Environmental Authorisation was submitted in terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) and the Environmental Impact Assessment Regulations published in Government Notice No. R.982 of December 2014 as amended. Environmental Authorisation was requested for the following listed activity:

GOVERNMENT NOTICE 983: LISTING NOTICE 1	
<b>Activity Number 14</b> <i>"The development of facilities or infrastructure, for the storage, or for the storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres."</i>	<i>The developers want to establish a filling station with a combined storage capacity up to 500 000 litres.</i>

In terms of the NEMA legislation, an application for environmental authorisation was lodged with the **Gauteng Department of Agriculture and Rural Development (GDARD)**.

No activity apart from those specified and approved above, may take place in the absence of approval by GDARD.

### 2.2.2 *The National Heritage Resources Act (Act 25 of 1999)*

The township falls within the scope of Section 38 of the National Heritage Resources Act, (NHRA), (Act 25 of 1999) and the applicable activities are:

- the construction of a road, wall, power line, pipeline, canal or similar form of linear development or barrier exceeding 300m in length;
- any development or other activity which will change the character of a site;
- exceeding 5 000m<sup>2</sup> in extent;
- involving three or more existing erven or subdivisions thereof;
- the re-zoning of a site exceeding 10 000m<sup>2</sup> in extent.

Note that the filling station forms part of the approved Watervalspruit X38 of which site clearance and construction has already commenced. No obvious cultural heritage resources or graves are present on this relatively small development area.

The subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility and may only become known when excavations are done during the construction phase. Care should therefore be taken when development commences that if any of these are discovered, construction must immediately be halted and PHRA-G contacted to confirm further actions.

Contact details of the Competent Authority are:

The Provincial Heritage Resources Agency of Gauteng  
The Assistant Director: HIA Applications, Ms Tebogo Molokomme (HIA Applications)  
Tel 011 355 2545 / 072932 0866  
Email: [Tebogo.molokomme@gauteng.gov.za](mailto:Tebogo.molokomme@gauteng.gov.za)

### **2.2.3 Occupational Health & Safety Act, 1993 (Act Nr 181 of 1993)**

The purpose of the Act is “to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith”.

A Safety Officer must be appointed by the developer and must at all times ensure that the safety and operation of the filling station complies with the requirements for health and safety as prescribed in the Occupational Health and Safety Act (OHS), 1993 (Act No/181 of 1993), as amended.

### **2.2.4 The National Water Act, 1998 (Act No 36 of 1998)**

The National Water Act (NWA) guides the management of water in South Africa as a common resource. The Act aims to regulate the use of water and activities which may impact on water resources through the categorisation of ‘listed water uses’ encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources. In terms of Section 19 (1) of the National Water Act, Act No 36 of 1998 “An owner of land, a person in control of land or a person who occupies or uses the land on which (a) any activity or process is or performed or undertaken; or (b) any other situation exists which causes, has caused or is likely to cause pollution of a water resource, must take all reasonable measures to prevent any such pollution of a water resource from occurring, continuing of recurring.”

The Department of Water & Sanitation (DWS) is the administering body in this regard.

No watercourse exists on site or in relative close proximity to the site; therefore the filling station facility will not require Water Use Authorisation in terms of Section 21 (c) impeding or diverting the flow of water in a watercourse or Section 21 (i) altering the bed, banks, course or characteristics of a watercourse. No water courses are however affected by the proposed development; therefore Water Use Authorisation is not required.

No waste may knowingly or negligently be disposed in a waterbody, or at any facility unless the disposal of that waste is authorised by law. Contaminated storm water runoff will be transported on site to a closed treatment facility where it will be treated. This treated storm water run-off could either be:

- transported to the outfall storm water pipeline (if available) where it will be discharged;
- used for irrigation purposes.

The Department of Water & Sanitation could require that this activity be registered in terms of Section 21(f) discharging waste or water containing waste into a water resource through a pipeline, canal, sewer outfall or other conduit. This must be confirmed by the engineers at the time that the design is finalised.

### **2.2.5 The Petroleum Products Act, (Act 120 of 1977), as amended and the Petroleum Products Amendment Act, 2003 (Act Nr 58 of 2003)**

- The Applicant must obtain a Site and Retail License according to the Petroleum Products Site and Retail Licenses Regulations, 2006 of the Act, as amended in 2012 from the Department of Energy prior to construction of the filling station.
- The 2006 Regulations regarding Petroleum Product Retail Licenses are applicable:
  - Section 2A (1)(b) states that no one is allowed to hold or develop a site without there being a site license.
  - Section 2A (1)(c) stated that no one is allowed to retail petroleum products without a retail license.
- All the conditions of the Site and Retail Licenses as stipulated by the Department of Energy must be complied with.

## 2.3 NON-COMPLIANCE

Non-compliance with the specifications of the EMPr constitutes a breach of contract for which the Applicant must be notified accordingly.

The Applicant will be deemed not to have complied with the EMPr if

- there is evidence of contravention of the EMPr specifications within the boundaries of the construction site, site extensions and access roads;
- there is contravention of the EMPr specifications which relate to activities outside the boundaries of the construction site;
- environmental damage ensued due to negligence;
- construction activities take place outside the defined boundaries of the site;
- the Applicant fails to comply with corrective or other instruction.

### 3. DESIGN AND PRE-CONSTRUCTION PHASE

#### 3.1 APPROVALS AND CONSENT

##### 3.1.1 *Layout (refer to Annexure A)*

The final layout of the filling station (to be included as Annexure A once approved), the type of facility and equipment installed and the methods of operation must be fully in accordance with the relevant and latest updated South African National Standards (SANS) supplied by the South African Bureau of Standards (SABS). This can be obtained from the following:

Standards of South Africa (A Division of the SABS)

Tel 012 428 7911 / [www.stansa.co.za](http://www.stansa.co.za)

The following codes (not limited though) are relevant:

- South African National Standard (SANS) 10089 – The Petroleum Industry:
  - SANS 10089-1:2008; Part 1: Storage and distribution of petroleum products in above-ground installations
  - SANS 10089-2:2017; Part 2: Electrical and other installations in the distribution and marketing sector
  - SANS 10089-3:2010; Part 3: The Installation, modification and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.
- SANS 1535; 2018: Steel tanks for the underground storage of hydrocarbons and oxygenated solvents

The following guidelines should be reflected in the final layout:

- Above ground storage tanks – minimum 5m from boundary walls.
- The width of the access driveways should be between 4 and 8 meters.
- The distance between the islands with the dispensers/pumping units should be at least 6 meters wide.
- The nearest island to the convenient store to be placed no closer than 10 meters, to enable vehicles to safely turn without obstructing other traffic and vehicles parked in front of the convenient store.
- The nearest pumps to the property boundary should be 3.5 meters clear or a distance equal to the building line restriction, whichever the larger.
- The pump islands should be located behind the ingress point, to allow proper and safe circulation through the forecourt.
- The layout of the forecourt to be designed to minimize traffic conflict with the balance of the site and ensure that vehicles entering the forecourt do not interfere with vehicles queuing to exit the site.
- These above-mentioned facilities tend to attract passing motorist because it creates a “one-stop shop” for motorist and make their trip more convenient.
- It is suggested that a convenience shop of no less than 150m<sup>2</sup> in size should be erected
- A minimum of 6 packing bays must be provided for each 100m<sup>2</sup>.
- Vapour emissions produced by fuel could be hazardous to human health. These emissions could potentially occur during the filling of UST's from the breather pipes, minor spillages and during the dispensing of fuel. Legal requirements as prescribed by the Department of Labour should be implemented. Measures to minimise vapour emissions in the layout include the following:
  - The careful location and elevation of the vent pipes to allow for the maximum dispersion of vapour
  - Stage 1 Vapor Recovery (from delivery vehicle to tank as well as tank to delivery vehicle) must be installed

### **3.1.2 Additional Requirements**

- The Applicant must ensure his Site & Retail Licenses from the Department of Energy is in place and that all conditions stipulated in the license are adhered to.
- Wayleave approval must be obtained from the City of Johannesburg Metropolitan Municipality and GAUTRANS for any work carried out in their respective reserves.
- The Emergency Response and Spill Contingency Plan must be approved by the City of Johannesburg Metropolitan Municipality Emergency Management Services, if required in terms of their bylaws.

## **3.2 DESIGN AND PLANNING REQUIREMENT**

### **3.2.1 Design and Placement of Above Ground Storage Tanks**

- The design and placement of tanks must be in accordance with industry standards, applicable guidelines and/or equivalent international recognised codes of good design and practice into the designs must take place.
- SANS 10089-1:2008; Part 1: Storage and distribution of petroleum products in above-ground installations is specifically applicable.
- All tanks, seals, pipes and fittings are required to
  - be chemically compatible with the hazardous substance being stored in it,
  - be protected from, or resistant to, all forms of internal and external wear, vibration, shock and corrosion;
  - have a stable foundation or support structure suitable for all operating conditions;
  - be protected from fire, heat, vacuum and pressure, which might cause tank failure;
  - be sized to suit process and storage requirements.
- No pooling of material under a road tanker may occur, thereby preventing the possibility of fire and explosions.
- Fuel storage tanks should be located on an impermeable surface that is protected from the ingress of storm water.

### **3.2.2 Design and Placement of Underground Storage Tanks**

- The findings of the site-specific geotechnical assessment must guide the design in terms of any geotechnical constraints specifically in terms of Underground Storage Tanks.
- SANS 10089-3:2010; Part 3: The Installation, modification and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations specifically is applicable.
- The design and placement of tanks will be in accordance with industry standards.
- Regulations and standards are in effect to prevent environmental damage caused by the leaking of underground tanks. The Project Engineer must ensure that relevant updated legislation, regulations and standards in terms of the proposed activity is obtained and implemented.
- A tank, as well as seals, pipes and fittings, is required to
  - be chemically compatible with the hazardous substance being stored in it;
  - be protected from, or resistant to, all forms of internal and external wear, vibration, shock and corrosion;
  - have a stable foundation or support structure suitable for all operating conditions;
  - be protected from fire, heat, vacuum and pressure, which might cause tank failure;
  - be sized to suit process and storage requirements.
- Cognisance must be taken of the following:
  - Whilst mechanical failure due to poor construction may be the main reason for UST system failure during initial service, thereafter corrosion becomes the principal cause of leaks.
  - The mitigation of corrosion will substantially reduce the incidents of leaks. It is far more viable and economic to treat the cause rather than the consequence.
  - Protection against the consequences of leaks involves the installation of costly secondary containment systems. It is far more cost effective to treat the cause of leaks by installing corrosion control systems such as cathodic protection.
  - The connecting pipes in a UST system are particularly vulnerable to corrosion induced leaks.
- Fuel storage tanks should be located on an impermeable surface that is protected from the ingress of storm water.

- Generally the regulations require that underground tanks be placed in a contained hole that has been sealed with cement or bricks and that the space around the tank must be filled with an inert material to prevent chemicals from seeping into the earth.
- The tank suppliers are generally required to assure the integrity of the UST system thereby limiting the exposure to unnecessary liabilities, protect capital investment, provide public safety and compliance with regulations as well as protect the surrounding environment and avoid costly remediation.
- A leak detection system must be implemented. This could involve observation or monitoring wells sunk in the sand back fill adjacent to tanks for the monitoring of groundwater and identification of possible leaking tanks.

### 3.2.3 Groundwater Protection

A site-specific geo-hydrological assessment is required to accommodate potential geo-hydrological constraints in terms of foundations' design and tanks installation. The findings and recommendations must form part of the specifications of this EMP.

The Safety Officer for the project must however ensure that an **Emergency Response and Spill Contingency Plan** is developed and maintained throughout construction and operation. It must include the following:

- The Applicant must ensure that there will be an appropriate response to unexpected and/or accidental actions or incidents that will cause environmental impacts, throughout the life cycle of the project. Such incidents may include, inter alia:
  - Accidental discharges to water and land;
  - Accidental exposure of employees to hazardous substances;
  - Accidental veld fires;
  - Accidental spillage of hazardous substances;
  - Specific environmental and ecosystem effects from accidental releases or incidents.
- Construction and permanent employees shall be adequately trained in terms of incidents and emergency situations.
- Actions to be taken in the event of different types of emergencies shall be included.
- The Emergency Management Plans for all major and minor incidents should be documented and made available to all relevant role players on site.
- Spill clean-up kits and absorbent material must be kept on site to assist in immediate clean-up of any hazardous material spillages.
- The Department of Water and Sanitation must be notified within 24 hours about any incidents during construction or operations that may impact on water resources.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release shall be listed.
- The Contractor and the Applicant will comply with the emergency preparedness, and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended, and/or any other relevant legislation.
- Specific consideration must be given to provide for fire flow during emergency situations.
- Should the existing municipal water reticulation be unable to accommodate the required flow for the proposed filling station, on-site fire storage must be implemented as an alternative.
- "No smoking" signs must be placed in visible areas on site.
- No fires may be made for the burning of vegetation and waste.
- No open fires are to be made on site – cooking facilities must be provided to personnel of the depot.
- In case of a fire, the local fire department must immediately be contacted.
- The adjacent land users must be informed and/or involved in case of any fire.
- It must be ensured that basic fire-fighting equipment is supplied to all offices, kitchen areas, workshop areas and stores.
- Welding gas cutting or cutting of metal may only be allowed inside the working/demarcated areas and with appropriate fire-fighting equipment at hand.
- Emergency preparedness will include details of the organization (manpower) and responsibilities, accountability and liability of personnel.



- The emergency preparedness plan shall include a list of key personnel and adjacent landowners.
- Details of emergency services (e.g. the fire department, spill clean-up services, etc.) shall be listed.
- The quality of groundwater should be protected during all the phases of the development.
- Any measures to reduce the likelihood of accidental spills will reduce the risk of groundwater contamination.
- Surface water from the servicing area must be allowed to drain into a grease trap before it enters the storm water system. The grease trap must be cleaned regularly and hazardous waste should be removed by a registered company for disposal at a registered waste disposal site. They should be able to produce a safe disposal certificate upon completion.
- Separate dirty from clean storm water.
- Contaminated soil and building waste must be removed after construction.
- Storm water from rooftops must be directed away from the storage area and be released as sheet flow to prevent erosion.
- Transfer of petroleum product from road tanker to the storage tanks:
  - Provide for a 200 thick reinforced concrete spillage containment slab with a slope towards a catch pit connected to an oil/grease separator.
- **Spillages**
  - In the event of a spillage during the construction phase, the responsibility for spill treatment will be with the Contractor and he will be responsible to arrange for competent assistance to clear the affected area.
  - Incident Reporting and Remedy
    - The individual responsible for, or who discovers a hazardous waste spill must report the incident to the Contractor who must immediately involve the Applicant.
    - The immediate response will be to contain the spill. The exact treatment of polluted soil and/or water must be determined in consultation with the Applicant and the Contractor
    - No person shall be allowed to approach a spill, fire, etc. unless he and/or she is equipped with the personal protective clothing and equipment.
    - The risk involved shall be assessed before anyone approaches the scene of the incident with the emergency response plan.
    - A written report shall be compiled and forwarded to the Regional Office of the Department of Water & Sanitation with the following contact details (to be confirmed at the time required):
 

Department of Water and Sanitation, North West Region, Water Resource Management Crocodile (West) and Marico Catchment Management Area  
Area Manager Northern Operations: Mr JJ (Hannes) Pretorius  
Chief Admin Clerk: Ms Cornia Theunissen  
Emails: [pretorih@dws.gov.za](mailto:pretorih@dws.gov.za), [theunissenc@dws.gov.za](mailto:theunissenc@dws.gov.za)
  - Written record of the corrective and remedial measures decided upon, and the progress achieved therewith over time, must be kept. Such progress reporting will be important for monitoring and auditing purposes. The written reports may be used for training purposes in an effort to prevent similar future occurrences.

### 3.2.4 Land Use

The Applicant must ensure that all requirements of the City of Johannesburg Metropolitan Municipality are met in terms of the application for the land use rights for a Public Garage. The details of the town planners for the project are the following:

Cosmopolitan Consult (Pty) Ltd, Care of Mr Anton Mathey  
Tel Nr: 011 541 3800  
Emails: [antonm@cosmopro.co.za](mailto:antonm@cosmopro.co.za)

### 3.2.5 Access and Traffic Requirement

- Any traffic requirement from the traffic engineers for the project must be integrated in the layout. The traffic engineers for the project are:  
Dhubecon Consulting Engineers  
Email: [admin@dhubecon.co.za](mailto:admin@dhubecon.co.za)
- Any specific conditions once provided by the City of Johannesburg Metropolitan Municipality Roads and Transport Division must be adhered to.
- Any specific conditions by GAUTRANS must be adhered to.
- During the Construction Phase: Specialized heavy vehicles could affect and/or disrupt the traffic flow. Flagmen and temporary warning signs must be placed at all access points where vehicles will access public roads during construction.

### 3.2.6 Storm Water Management

- Any specific conditions once provided by the City of Johannesburg Metropolitan Municipality Roads and Stormwater Division must be adhered to.
- A Stormwater Management Plan must be compiled by a professional consulting engineer and must be implemented in the final design of the facility.
- 
- General requirement would typically include the following:

Management of the internal storm water system must be categorised in two separate zones, namely the Contaminated Zone (filling areas, washing areas, etc.) and the Uncontaminated Zone (parking, roof areas, circulation roads, etc.)

#### **The Contaminated Zone**

Stormwater run-off must be drained via concrete areas to kerb and/or grid inlets at low points throughout the proposed development. These inlets will connect to a proposed internal stormwater system which will connect to an oil separator / grease trap before discharging into a temporary attenuation storage structure. From here the contaminated run-off will be transported to a small closed treatment facility similar to a GEM sewage system where it will be treated. The treated storm water run-off could either be:

- transported to the outfall storm water pipeline (if available) where it will be discharged;
- used for irrigation purposes.

The Department of Water & Sanitation could require that this activity be registered in terms of Section 21(f) *discharging waste or water containing waste into a water resource through a pipeline, canal, sewer outfall or other conduit*. This should be confirmed by the engineers at the time that the design is finalised.

#### **The Uncontaminated Zone**

Stormwater management within this zone will consist of surface drainage. The stormwater run-off will drain via concrete and paved areas to kerb and/or grid inlets located at low points throughout the development. From these inlets, the stormwater run-off will be transported via a proposed internal storm water pipeline up to a proposed underground attenuation concrete structure. The attenuation pond will be designed to attenuate the post development 1:25 year run-off and the outflow will be the pre development 1:5-year run-off for the proposed development. The attenuation pond outlet structure will discharge directly into the municipal storm water system. Energy dissipation structures must be installed to dissipate the energy at the outlet structure. The attenuation pond will be able to accommodate the post 1:50 year run-off.

- General measures to be implemented are the following:
  - Storm water should not be discharged into the working areas and it should be ensured that storm water leaving the footprint of the proposed development footprint areas is not contaminated by any substance, whether that substance is solid, liquid, vapor or any combination thereof.
  - Water containing pollutants or visible suspended materials should be prevented from entering storm water drains and water resources.



- The surfacing of driveways and parking areas must be permeable where possible. Green Infrastructure and Sustainable Urban Drainage (SUD) principles should be considered to be implemented as far as practical.
- All outlet structures must be adequately designed to prevent erosion.
- Waste water areas (i.e. from a truck wash and/or servicing area) must be lined by an impermeable material in order to prevent infiltration and contamination of the soils and groundwater within the area.

### 3.2.7 Green Approach

- The collection of storm water from the roofs of the buildings for recycling should be encouraged.
- The separation of waste, temporary storage onsite and removal by recycling companies should be considered the final site layout.
- Construction waste should be sold for recycling purposes.
- It is required that green technologies be incorporated in the design of the on-site buildings (office and guard housing, etc.), i.e:
  - The architectural design should ensure that proper natural flow of air into and out of the buildings occur deliberately as ventilation.
  - Proper insulation of the ceilings is required, because as much as 50% of heat losses in a building can be attributed to a lack of ceilings and ceiling insulation. This will significantly reduce heating and cooling expenses.
  - Lighting
    - The design of the development must optimize the use of natural light in all components through the correct positioning and sizing of the windows; thereby saving the need to install additional lighting and associated long-term energy use.
    - LED bulbs (a light source that is created by a Light Emitting Diode) are recommended instead of ordinary bulbs for all light required for non-security purposes. LEDs, use more than 75% less energy and last 25 times longer than incandescent lighting.
    - Day and night sensors will ensure lights do not stay on unnecessarily.
  - Cooking and refrigeration
    - An energy saving switch should be fitted to the refrigerators.
    - Convection ovens should also be installed as they use less energy than conventional ovens and cooking time is substantially reduced.
  - Water heaters/ geysers
    - Installing a geyser blanket on geysers and hot water storage tanks will reduce the amount of heat lost by the geyser to cold air outside and thus conserve energy.
    - Hot water pipes should also be insulated to prevent heat loss.
  - Air Conditioners
    - Energy efficient heaters and air conditioners should be used.
    - The outdoor cooling units must be protected from the sun. They should therefore be placed on the southern side of the buildings.
- Consideration of alternative resources:
  - Power Supply -
    - Conservation of energy or the utilisation of renewable and sustainable energy technologies is encouraged. This includes solar panels that generate and store electricity in suitable battery packs, solar water heater(s), backed up with gas, as well as gas appliances.
    - Generators should be available as back-up to municipal supply.
  - Cooking and Refrigeration -
    - The convenience store should be encouraged to install gas appliances.
    - The storage of gas must conform to the stipulations laid out in the OHSA.
  - Water Heaters / Geysers -
    - Solar water heater(s) conserve energy and can be backed up with gas or electric geysers.

### 3.2.8 Landscape Development Plan

A Landscape Development Plan (LDP) must be compiled and approved by the City of Johannesburg Metropolitan Municipality Environmental Management and Parks Division. It needs to consider the following:

- Landscaping should involve at least 80% indigenous plants.
- One indigenous tree should be provided for every two open parking bays.
- All planting should be specified in a planting legend key on the LDP with specifications of species, size, square areas, densities and quantities.
- Street trees should be considered for the sidewalk to be planted 10m to 15m apart.
- The LDP must be designed by a suitable qualified landscape architect or technologist. The name and contact details must be provided on the LDP.

### 3.3 CONSTRUCTION SITE

- The construction site office and storage areas for material and equipment must be restricted and fenced to prevent impacts and human interference to spread further than the site.
- Storage facilities for construction equipment must be provided for within the site.
- Accommodation for labourers must be limited to guarding personnel on the construction site (with labourers transported to and from the residential areas).
- Sufficient ablution and proper cooking facilities must be provided at the construction site.
- On-site storage of petroleum products for construction purposes should be limited.
- Servicing measures of vehicles to be in designated areas with appropriate spill management procedures (spill kits) should be in place.
- Liquid waste (grey water) should be disposed of with sewerage.
- Solid domestic waste should be placed in containers and regularly disposed of via the municipal waste removal system.
- Stringent clean up requirements of the site camp is required (waste concrete, reinforcing rods, waste bags, wire, timber etc.) and disposal at a municipal waste disposal site must be done on a regular basis.

### 3.4 FIRE MANAGEMENT

- Specific consideration must be given to provide for fire flow during emergency situations. The fire flow of the development must generally be 50l/second for a 2 hour period. Should the existing municipal water reticulation be unable to accommodate the required flow for the proposed filling station, on-site fire storage must be implemented as an alternative. Fire equipment and storage facilities i.e. ground level storage reservoir with a booster pump station must be provided.
- In case of a fire, the local fire department must immediately be contacted.
- The adjacent land users must be informed and/or involved in case of any fire.
- It must be ensured that the basic fire-fighting equipment is supplied to the site office, kitchen areas, workshop areas and stores.
- Welding gas cutting or cutting of metal will only be allowed inside the working/demarcated areas and with appropriate fire-fighting equipment at hand.
- "No smoking" signs must be placed in visible areas on site.
- No fires may be made for the burning of vegetation and waste.
- No open fires are to be made on site – cooking facilities must be provided to personnel and labourers.
- No firewood may be collected from nearby land.

### **3.5 APPOINTMENT OF CONTRACTORS**

- Environmental clauses as referred to in this EMPr, should be included in contract documents of all contractors.
- The appointment of contractors with proven track records of sound environmental performance should be given priority.
- The contractor must be aware that all construction waste material generated during and after construction should be disposed of at a permitted landfill site and an agreement letter between the municipality and the contractor should be available on request.
- All recommendations in the EMPr are also binding on all contractors, labourers and personnel on site.

## **4. CONSTRUCTION PHASE**

### **4.1 GENERAL ENVIRONMENTAL REQUIREMENT**

- No trees, shrubs or rocks may be disturbed and/or removed, no snares may be placed and no hunting of small fauna species and birds may take place on adjacent land.
- Alien vegetation shall be managed according to the NEMA: Biodiversity Act in terms of the Alien Species Regulations, 2014 as well as in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. The Contractor shall prevent the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading of such plants onto adjacent vacant land as a result of construction activities.
- All storm water runoff must be managed efficiently so as to avoid storm water damage and erosion to adjacent properties.
- During and after construction, storm water control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. to avoid the unnecessary loss of soil.
- To cause the loss of soil by erosion is an offence under the Soil Conservation Act, Act No 76 of 1969.) The access road and site surface must be monitored for deterioration and possible erosion. Pro-active measures must be implemented to curb erosion and to rehabilitate eroded areas. All areas susceptible to erosion must be installed with temporary and permanent diversion channels and berms to prevent concentration of surface water and scouring of slopes and banks, thereby countering soil erosion.
- Construction during the dry months of the year should be considered in order to overcome the problems caused by excessive moisture.
- All storm water runoff must be managed efficiently so as to avoid storm water damage and erosion to adjacent properties.
- During construction, storm water control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. to avoid the export of soil into the watercourse.
- Storm water should not be discharged into the working areas and it should be ensured that storm water leaving the footprint of the proposed development areas is not contaminated by any substance, whether that substance is solid, liquid, vapor or any combination thereof.
- Stockpiling of construction material and soils should be such that pollution of water resources is prevented and that the materials will be retained in a storm event.
- Refer to the requirement in the Stormwater Management Plan supplied under the heading "Design and Pre-Construction Phase".

### **4.2 CONSTRUCTION OF STORAGE TANKS**

- The installation of the storage tanks must take place in accordance with industry standards as referred to in this document.
- To ensure the system is installed as required by the regulatory authorities, on-site works must be supervised at all times by an experienced person.
- It is essential that any protective coating applied to the tanks and pipework is not damaged during installation. The coating must be inspected during and after installation and any damage must be repaired immediately prior to any filling of the tanks.
- Records must be kept of how the tank and pipe system was installed for future reference in case of expansion and/or decommissioning with removal of the equipment. These records must include record and certificates of the suppliers, as well as technical drawings of the installation of the tanks and pipework, their dimensions and the materials used. It is recommended that all records are dated and maintained during the life of the tanks and are kept on-site for future reference (for example, in the event of a leaks or spillage) in a place from where they can be retrieved quickly.

### 4.3 GROUNDWATER

- Site specific mitigation requirements for spills as included in the table in the section “Specification applicable to all Phases of Project Development” must be adhered to.
- Under no circumstances must surface or ground water be polluted.
- Adequate oil containment precautions must be taken.
- A bio-remediation contractor must be appointed to rehabilitate large oil spills. The regional officer of the Department of Water and Sanitation will advise in this regard. Contact details are provided in Paragraph 2.2.4 above and they must be notified within 24 hours about any incidents during construction or operations that may impact on water resources.
- Small oil spills must be cleaned immediately with an oil spill kit that must at all times be available on site.
- Proper maintenance procedures for vehicles and equipment must be followed.
- Servicing of vehicles may only take place in designated areas with appropriate spill management procedures in place.
- Drip trays should be used during the servicing of vehicles. The content thereof must be disposed in accordance with relevant hazardous material disposal requirement.

### 4.4 WASTE MANAGEMENT

#### 4.4.1 General Waste

- Littering or illegal dumping of any waste material is prohibited.
- No waste disposal holes may be made on site.
- Under no circumstances should waste be burnt on site.
- Waste separation should be encouraged for recycling purposes.
- Provision must be made for the collection of all general waste materials. Rubbish bags and bins must be provided on the construction site and must be emptied on a regular basis. It is expected that removal of waste will be handled by the municipality; however, if this municipal service cannot be provided, the Contractor must remove the waste to a registered landfill facility.
- Liquid waste (grey water) must be disposed with sewerage.

#### 4.4.2 Construction Waste

- Compliance with stringent daily clean up requirements of site camp inert waste (waste concrete, reinforcing rods, wire, timber, etc.) and disposal at municipal waste disposal sites must take place.
- Construction waste must be collected and sold for recycling purposes.

#### 4.4.3 Sewage

- Appropriate toilet facilities must be provided. If existing ablution facilities cannot be utilised, then chemical toilets must be supplied and must be provided by a registered company and be serviced on a regular basis.
- No effluent may be dumped in the veld or streams in the macro area.

#### 4.4.4 Hazardous Waste

- Oil contaminated waste (soil, cloths used to clean small spills, spill kits, content of drip trays, etc.) must be disposed of at a facility that is registered as a hazardous landfill facility.
- All hazardous substances at the site must be adequately stored and accurately identified, recorded and labelled.
- Hydrocarbon (oil, diesel, petrol) waste as well as hydrocarbon containing material must be regarded as hazardous waste and separated from general waste.
- Suitable trained/registered contractors will remove the hazardous waste to a landfill site registered to accept hazardous waste. Record of collection and delivery must be maintained during the construction period.

## **4.5 COMMUNITY (LIAISON, SAFETY, SECURITY, NOISE, DUST, ETC.)**

Reasonable liaison will be maintained with adjacent communities to ensure that the following is effected:

- Feedback on the environmental performance of the project must take place if required.
- A complaints' register needs to be opened and maintained by the Applicant. The register will contain the contract details of the person who made complaints and information regarding the complaint itself, including the date of submission.
- Any conservation authority and/or institution should be allowed reasonable access to the construction site on request and arrangement with the Contractor and/or Applicant.

### **4.5.1 Labourers**

- In order to prevent and/or minimize crime, it is required that only guarding personnel be supplied with controlled serviced accommodation.
- All construction workers will be allowed only for specified day light hours.
- Transport should be made available by the Contractor to labourers from the site after working hours.
- Supervision of labourers must at all times take place.
- No wandering on adjacent properties may be allowed.

### **4.5.2 Noise**

In the ~~very~~ unlikely event that noise complaints are made, the following must be implemented:

- Construction activities involving use of the service vehicle, machinery, hammering etc, must be limited to the hours between 7:00 am and 5:30 pm weekdays; 7:00 am and 2:00 pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays.
- Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc) must be preceded by notice being given to the affected neighbours at least 24 hours in advance.
- Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers, etc.) must be used as per operating instructions and maintained properly during site operations.

### **4.5.3 Dust**

Watering of construction sites (storage areas, roads, etc.) must take place at least once a day to prevent dust pollution as a result of construction activities.

### **4.5.4 Other Measures**

- All excavated areas must be clearly marked and barrier tape must be placed around them to prevent humans and animals from falling into them.
- The Contractor must implement traffic control measures to prevent congestion of traffic as a result of construction vehicles.

## **4.6 SITE CLEARANCE AND LANDSCAPING**

The following mitigation measures must be implemented at the end of the construction phase whilst there are still the necessary equipment and labourers on site to ensure that the following could effectively be executed.

### **4.6.1 Site Clearance**

- After construction all building material, signs of excess concrete, equipment, houses, temporary ablution facilities, building rubble, refuse and litter must be removed and cleaned up from the construction site.
- Items that can be used again should be recycled. Unusable waste steel and aluminum should be sold to scrap dealers for recycling,

### **4.6.2 Landscaping**

The Landscape Development Plan referred to in Paragraph 3.2.8 must be implemented to provide shade, promote the natural landscape of the macro area and to soften the visual experience of the site.

## **5. OPERATIONAL PHASE**

### **5.1 MONITORING AND RECTIFICATION**

- As part of routine maintenance, the Applicant must undertake regular engineering inspections of the tanks, tank valves and pumps to ensure that there are no leaks.
- Monitoring of tanks and potential failure should be done via the leak detection system (i.e. the observation or monitoring wells).
- The written record that was compiled during the installation of the tank system that includes the technical drawings of the installation showing the tanks and pipe works, their dimensions and the materials used (refer to the heading "CONSTRUCTION OF THE STORAGE TANKS ") must be kept on-site for reference in the event of a leak or spillage in a place from where it can be retrieved quickly.
- Any groundwater monitoring requirement resulting from the geo-hydrological study referred to in must be adhered to.
- Any incidents resulting from the filling station structures and/or operation that could have a detrimental impact on the environment must immediately be investigated and rectification measures must be implemented and monitored accordingly.

### **5.2 HEALTH AND SAFETY**

- The Applicant must at all times ensure at all times that the safety and operation of the filling station complies with the requirements for health and safety as prescribed in the Occupational Health and Safety Act (OHS), 1993 (Act Nr 181 of 1993), as amended.
- The following specific safety and protection measures shall be provided in accordance with the OHS:
  - First aid treatment
  - Medical assistance
  - Emergency treatment
  - Prevention of inhalation of fumes
  - Protective equipment, clothing and footwear
  - Safety goggles and eye shields
- All staff engaged in operational maintenance duties shall be fully acquainted with the requirements of the safety regulations in terms of the OHS Act, 1993.
- Maintenance and inspection work shall be planned and supervised by responsible members of staff who shall ensure that all relevant precautions are taken.
- Safety signs must be placed in visible areas all over the site.
- A complete First Aid Kit must be readily available on site and regularly serviced.
- Personnel must continuously be trained in health and safety awareness and management of emergency situations.
- Vapour emissions produced by fuel could be hazardous to human health. These emissions could potentially occur during the filling of UST's from the breather pipes, minor spillages and during the dispensing of fuel. Legal requirements as prescribed by the Department of Labour should be implemented. Measures to minimise vapour emissions include the following:
  - Providing and utilizing appropriate protective gear and clothing.
  - Continuous awareness training of personnel and for road tanker drivers delivering fuel to site.
  - Development of site specific protocols with regards to delivery and use of products and use of the relevant SANS procedures. This is to minimise the possibility of a spill or leak occurring, with associated vapour emissions.

### **5.3 TRAFFIC**

There is enough turning space for large petroleum trucks within the demarcated site area. This should be maintained during all future development within this site.



## 5.4 STORMWATER MANAGEMENT

The requirements from the Stormwater Management Plan as referred to in Paragraph 3.2.6 must at all times be implemented.

## 5.5 EMERGENCY RESPONSE AND SPILL CONTINGENCY PLAN

The **Emergency Response and Spill Contingency Plan** referred to in Paragraph 3.2.3 of this document needs to be refined, updated and maintained at all times and must be communicated with the relevant personnel. It includes but is not limited to the following:

- The Applicant must ensure that there will be an appropriate response to unexpected and/or accidental actions or incidents that will cause environmental impacts, throughout the life cycle of the project. Such incidents may include, inter alia:
  - Accidental discharges to water and land;
  - Accidental exposure of employees to hazardous substances;
  - Accidental veld fires;
  - Accidental spillage of hazardous substances;
  - Specific environmental and ecosystem effects from accidental releases or incidents.
- Construction and permanent employees shall be adequately trained in terms of incidents and emergency situations.
- Actions to be taken in the event of different types of emergencies shall be included.
- The Emergency Management Plan actions taken for all major and minor incidents should be documented and made available to all relevant role players on site.
- Spill clean-up kits and absorbent material must be kept on site to assist in immediate clean-up of any hazardous material spillages.
- DWS must be notified within 24 hours about any incidents during operation that may impact on water resources and a written report shall be compiled and forwarded to the Regional Office of the Department of Water & Sanitation. (Contact details to be confirmed at the time required)
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release shall be listed.
- The Contractor and the Applicant will comply with the emergency preparedness, and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), the National Environmental Management Act, 1998 (Act No 107 of 1998), the National Water Act, 1998 (Act No 36 of 1998) and the National Veld and Forest Fire Act, 1998 (Act No 101 of 1998) as amended, and/or any other relevant legislation.
- Specific consideration must be given to provide for fire flow during emergency situations. The fire flow of the development must be 50l/second for a 2 hour period. Should the existing municipal water reticulation be unable to accommodate the required flow for the proposed filling station, on-site fire storage must be implemented as an alternative.
- “No smoking” signs must be placed in visible areas on site.
- No fires may be made for the burning of vegetation and waste.
- No open fires are to be made on site – cooking facilities must be provided to personnel of the Filling Station.
- In case of a fire, the local fire department must immediately be contacted.
- The adjacent land users must be informed and/or involved in case of any fire.
- It must be ensured that basic fire-fighting equipment is supplied to all offices, kitchen areas, workshop areas and stores.
- Welding gas cutting or cutting of metal may only be allowed inside the working/demarcated areas and with appropriate fire-fighting equipment at hand.
- Employees shall continuously and adequately be trained in terms of incidents and emergency situations.
- Emergency preparedness will include details of the organization (manpower) and responsibilities, accountability and liability of personnel.
- The emergency preparedness plan shall include a list of key personnel and adjacent landowners.
- Details of emergency services (e.g. the fire department, spill clean-up services, etc.) shall be listed.



## 5.6 WASTE MANAGEMENT

### 5.6.1 General Waste

- Grey water should be used for irrigation purposes.
- Littering or illegal dumping of any waste material is prohibited.
- No waste disposal holes may be made on site.
- Under no circumstances should waste be burnt on site.
- Waste separation should be done for recycling purposes (i.e. paper, cans and plastics):
  - A designated area should be identified for the sorting, temporary storage and collection of waste
  - A specific employee should be trained with this responsibility.

### 5.6.2 Hazardous Waste

- Oil contaminated waste (soil, cloths used to clean small spills, spill kits, content of drip trays, etc.) must be disposed of at a facility that is registered as a hazardous landfill facility.
- All hazardous substances at the site must be adequately stored and accurately identified, recorded and labelled.
- Hydrocarbon (oil, diesel, petrol) waste as well as hydrocarbon containing material must be regarded as hazardous waste and separated from general waste.
- Persons who remove hazardous waste must be appropriately qualified and authorized.
- Suitable trained/registered contractors will remove the hazardous waste to an approved recycling depot and/or landfill site registered to accept hazardous waste.
- Proof of collection and delivery of waste (chain of custody documentation) must be kept on site.

## 5.7 RECOMMENDED GREEN APPROACH

It is advised that the Applicant commit to the following green approach:

- Continuous implementation of the requirement for energy efficiency provided in Paragraph 3.2.7 of this EMPr.
- The collection of storm water from the roofs of the buildings for recycling should be encouraged.
- Rain harvesting water tanks should be installed for the washing of the parking bays.
- Energy efficient bulbs should be used instead of ordinary bulbs for all light required for non-security purposes.
- Solar panels and/or generators should be fitted as back-up and/or support of municipal electricity supply

It is recommended that the recyclable waste management for the filling station include the following during the operational phase:

- An appropriate area where waste can be sorted and stored for collection must be identified and recycling bins must be provided.
- The site must have a concrete surface and it must be under roof (for protection against rain, storm water runoff and fire).
- The site must be accessible for collection vehicles.
- A dedicated worker must be trained in the recycling of waste (baling; compaction; breaking of glass, etc.) to ensure effective recycling of relevant material.
- This recycling waste area must be regularly cleaned and disinfected.

## 5.8 GENERAL

- The Applicant must at all times follow acceptable maintenance and operational practices to ensure consistent, effective and safe performance of the infrastructure.
- The Applicant must ensure compliance with relevant legal requirement and industry standard at all times.

## 5.9 DECOMMISSIONING

At this stage decommissioning is not foreseen in the near future. At the time it might become applicable, decommissioning must take place as follows:

- In compliance with the relevant environmental legislative requirements in terms of the National Environmental Management Act, 1998 (Act No 107 of 1998) applicable at that time.
- It should be done strictly according to all relevant standards, including SANS 10089-3: *The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.*

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## **Annexure A Diagrammatical Layout of the Filling Station Site**

*(Final approved layout to be attached once available)*

## **Annexure B Environmental Impact Assessment Table**

### **EVALUATION METHOD FOLLOWED**

The nature and extent of expected negative impacts are described directly under the heading for each impact.

Below this description for each impact, a table has been designed to facilitate evaluation of the expected negative impact in terms of significance (intensity), extent, duration, probability and significance after mitigation.

The numerical values have the following values:

Impact Severity before Mitigation (significance / intensity) relates to the potential severity of the proposed project on the specific environmental component without any mitigation and is being evaluated and rated on a scale from 0 to 4 where the following values apply:

0 = no impact; 1= low impact; 2 = medium impact; 3 = significant impact; 4 = severe impact

The extent of the expected negative impact refers to the spatial effect of the impact, measures as local or regional or national.

The duration of the expected negative impact is supplied as either “temporary” - 0-3 years (generally during construction) or “permanent”.

The probability that the expected negative impact would occur if not mitigated is rated as “low”, “medium” or “high”.

The negative impacts are also evaluated in terms of the effectiveness with which it could be mitigated: “Severity of Impact after Mitigation” is rated on a scale from 0 to 4, with a severe impact after mitigation receiving a rating of 4 (and can therefore influence the viability of the project) and no impact after mitigation receiving a rating of 0.

## PLANNING & DESIGN PHASE

IMPACT DESCRIPTION: DIRECT IMPACT	PROPOSED MITIGATION (DETAIL SUPPLIED IN EMPr)	RESPONSIBLE PERSON
Poor design will result in structural failures and subsequent leaks with resultant negative environmental impact.	<ul style="list-style-type: none"> <li>Ensure compliance with industry standards.</li> <li>Provide for a 10000 x 5000 x 200 thick reinforced concrete spillage containment slab adjacent to the extended filler manholes laid to fall to a catch pit connected to an oil/grease separator that discharges into the existing sewer line.</li> <li>Compliance with SANS 10089-3, 1999: The installation of underground storage tanks, pumps/dispensers and pipe work at service stations and consumer installations.</li> <li>Compliance with SANS 10089-1:2008; Part 1: Storage and distribution of petroleum products in above-ground installations.</li> </ul>	Consulting Engineers

Impact Description	Impact Severity before mitigation (0 - 4)	Extent Local / Regional / National	Duration Temporary / Permanent	Probability <i>Probability it would occur if not mitigated: low / medium / high</i>	Severity of Impact After Mitigation
Poor design- structural failures	4	Local	Temporary / Permanent	High	1

IMPACT DESCRIPTION: INDIRECT IMPACT	PROPOSED MITIGATION (DETAIL SUPPLIED IN EMPr)	RESPONSIBLE PERSON
Disregard of legislation requirements could result in negative environmental impact and costly non-compliance actions by authorities.	Ensure compliance with relevant legislation and legal standards as described in Paragraph 2.2 of the EMPr.	Developer Consulting Engineers Town Planners Environmental Control Officer

Impact Description	Impact Severity before mitigation (0 - 4)	Extent Local / Regional / National	Duration Temporary / Permanent	Probability <i>Probability it would occur if not mitigated: low / medium / high</i>	Severity of Impact After Mitigation
Disregard of legislative requirement	3	Local	Permanent	High	1

## CONSTRUCTION PHASE

IMPACT DESCRIPTION: DIRECT IMPACT	PROPOSED MITIGATION (DETAIL SUPPLIED IN EMPR)	RESPONSIBLE PERSON
Impact on natural environment – should be considered in context that site is devoid of any natural habitat	Prevent impact of construction activities to extend on to adjacent land – demarcated and fenced construction camp; strict control of labourers.	Contractor Environmental Control Officer
Impact on cultural heritage environment – should be considered in context that no obvious heritage resources of significance had been identified on the site	<ul style="list-style-type: none"> <li>• PHRA-G must immediately be alerted in case evidence of artefacts, paleontological fossils, additional graves or other heritage resources are discovered during the course of the development.</li> <li>• All development activities must be halted and PHRA-G would probably require that an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) be appointed to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from PHRA-G to conduct the mitigation measures.</li> </ul>	Contractor Environmental Control Officer
Increased risk for leaks of underground storage tanks as a result of poor construction methods can result in significant pollution.	<ul style="list-style-type: none"> <li>• The installation of the ASTs and USTs must take place in accordance with industry standards.</li> <li>• To ensure the system is installed as required by the regulatory authorities, on-site works must be supervised at all times by an experienced person.</li> <li>• It is essential that any protective coating applied to the tanks and pipework is not damaged during installation. The coating must be inspected during and after installation and any damage must be repaired immediately and before the excavation is filled in again.</li> <li>• Records must be kept of how the UST system was built for future reference during site construction work and the decommissioning or removal of the equipment. These records must include technical drawings of the installation showing the location and orientation of the tanks and pipework, their dimensions and the materials used. It is recommended that               <ul style="list-style-type: none"> <li>• all records are dated and maintained during the life of the UST;</li> <li>• the records are kept on-site for future reference (for example, in the event of a leak or spillage) in a place from where they can be retrieved quickly.</li> </ul> </li> </ul>	Contractor Environmental Control Officer SHE Officer
Increased risk for spillages – associated with construction activities, maintenance and repair of vehicles, etc.	Strict measures must be implemented: <ul style="list-style-type: none"> <li>• Emergency incident reporting and remedial measures must be in place</li> <li>• Adequate oil containment precautions must be taken.</li> <li>• A bio-remediation contractor must be appointed to rehabilitate large oil spills. The regional officer of the Department of Water &amp; Sanitation will advise in this regard.</li> </ul>	Contractor Environmental Control Officer SHE Officer

	<ul style="list-style-type: none"> <li>• Small oil spills must be cleaned immediately with an oil spill kit.</li> <li>• On-site storage of petroleum products must be limited.</li> <li>• Proper maintenance procedures for vehicles and equipment must be followed.</li> <li>• Servicing of vehicles may only take place in designated areas.</li> <li>• Drip trays should be used during the servicing of vehicles. The content thereof must be disposed in accordance with relevant hazardous material disposal requirement.</li> <li>• Measures to contain accidental spills must be readily available on site (spill kits).</li> <li>• All hazardous substance spills must be reported to the Contractor and the ECO, recorded and investigated.</li> </ul>	
Increased risk for soil, groundwater and surface water pollution result mostly from poor waste management.	<p>Waste management measures are provided in the EMPR in terms of:</p> <ul style="list-style-type: none"> <li>• <u>General household waste</u> (i.e. strict control over labourers; no burning or burying of waste; provision of dustbin and garbage bags; regular removal preferably by municipal waste removal; etc)</li> <li>• <u>Construction waste</u> (i.e. stringent daily clean-up and either disposal at registered waste site or preferably sold for recycling purposes)</li> <li>• <u>Sewage waste</u> (labourers to be provided with proper ablution facilities- either municipal or chemical toilets provided and serviced by a reputable outside company; no effluent to be dumped on adjacent land)</li> <li>• <u>Hazardous waste</u> (i.e. oil contaminated waste to be moved to registered hazardous waste landfill site; adequate storage and labelling of hazardous materials on site). Stormwater should not be discharged into the working areas and it should be ensured that stormwater leaving the footprint of the proposed development areas is not contaminated by any substance, whether that substance is solid, liquid, vapour or any combination thereof.</li> </ul>	Contractor Environmental Control Officer
Increased risk for erosion – this should be considered in context with the fact that the topography is flat and that sheet drainage towards the north-east occurs.	<p>Management measures provided in the EMPr include</p> <ul style="list-style-type: none"> <li>• All vehicle movement must be along the existing lines or tracks.</li> <li>• Construction during the dry months of the year should be considered in order to overcome the problems caused by excessive moisture.</li> <li>• Stormwater run-off from the filling station must be directed to catch-pits with sand and oil and grease separators prior to re-use or release in the stormwater drains on site.</li> <li>• All storm water runoff must be managed efficiently so as to avoid storm water damage and erosion to adjacent properties.</li> <li>• Storm water control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. to avoid the export of soil into the watercourse.</li> </ul>	Contractor Environmental Control Officer

Community impact is evident in noise as a result of construction activities; risk of safety during excavations; dust created by construction vehicles; etc.	Management measures provided in the EMPR include <ul style="list-style-type: none"> <li>• <u>Noise</u> (restricted working hours; control of labourers (communication, music and broadcasts); construction vehicles to be fitted with noise reduction measures)</li> <li>• <u>Safety</u> (all excavated areas to be clearly marked with barrier tape, fencing of construction area)</li> <li>• <u>Dust pollution</u> (regular watering of construction site)</li> </ul>	Contractor Environmental Control Officer
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<b>IMPACT DESCRIPTION: INDIRECT IMPACT</b>	<b>PROPOSED MITIGATION (DETAIL SUPPLIED IN EMPr)</b>	<b>RESPONSIBLE PERSON</b>
Congestion of traffic can take place as a result of construction vehicles entering and leaving the construction site during peak hours.	The Contractor must provide for traffic control measures during peak hours when relevant.	Traffic Engineer Contractor
Alien infestation onto adjacent land can occur. The adjacent land is already significantly impacted upon as a result of human interference and alien vegetation infestation.	Alien vegetation shall be managed in terms of the Regulation GNR.1048 of 25 May 1984 (as amended) issued in terms of the Conservation of Agricultural Resources Act, Act 43 of 1983. The Contractor shall prevent the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading of such plants onto adjacent land as a result of construction activities.	Contractor Environmental Control Officer
Community impact – an increased risk of crime can result from increased working force in the area	Strict measures in terms of control of labourers must be implemented: <ul style="list-style-type: none"> <li>• Transport to and from the construction site must be provided.</li> <li>• Only guarding personnel to be accommodate overnight.</li> <li>• Labourers should at all time be supervised.</li> </ul>	Contractor Environmental Control Officer

<b>Impact Description</b>	<b>Impact Severity Degree (0 - 4)</b>	<b>Extent Local / Regional / National</b>	<b>Duration Temporary / Permanent</b>	<b>Probability <i>Probability it would occur if not mitigated: low / medium / high</i></b>	<b>Severity of Impact After Mitigation</b>
Congestion of traffic	2	Local	Temporary	High	1
Alien infestation	2	Local	Permanent	High	1
Community Impact	3	Local	Temporary	Medium	1



## OPERATIONAL PHASE

IMPACT DESCRIPTION: DIRECT IMPACT	PROPOSED MITIGATION (DETAIL SUPPLIED IN EMPR)	RESPONSIBLE PERSON
<p>Leaks</p> <ul style="list-style-type: none"> <li>Leaks could occur with resultant pollution of groundwater.</li> <li>This would typically occur if structural failure happens.</li> </ul>	<ul style="list-style-type: none"> <li>Prevent impact rather than manage impact.</li> <li>Provide measures for emergency reporting and remedy</li> <li>Follow acceptable maintenance and operational practises to ensure consistent, effective and safe performance of the infrastructure</li> <li>As part of routine maintenance, the Applicant must undertake regular engineering inspections of the tanks, tank valves and pumps to ensure that there are no leaks.</li> <li>Leak detection facilities must be installed and monitored on an ongoing basis</li> <li>Pressure tests should be conducted regularly on fuel tanks to ensure that there are no leakages.</li> <li>The written record that was compiled during the installation of the UST system that includes the technical drawings of the installation showing the location and orientation of the tanks and pipework, their dimensions and the materials used (refer to the heading "CONSTRUCTION OF THE UNDERGROUND STORAGE TANKS ") must be kept on-site for reference in the event of a leak or spillage in a place from where it can be retrieved quickly.</li> <li>Any incidents resulting from the filling station structures and/or operation that could have a detrimental impact on the environment must immediately be investigated and rectification measures must be implemented and monitored accordingly.</li> <li>Measures such as spill kits to contain spills must at all times be available on site.</li> <li>All incidents must be reported to the Department of Water and Sanitation within 24 hours of the occurrence who will advise on emergency procedures to follow.</li> </ul>	<p>Owner of the Environmental Authorisation Filling Station Manager SHE Officer</p>
<p>Spillages</p> <ul style="list-style-type: none"> <li>Spillages could occur with increased risk for groundwater pollution.</li> <li>This could typically happen during the transfer of petroleum product from road tanker to the storage tanks.</li> </ul>	<ul style="list-style-type: none"> <li>Prevent impact rather than manage impact.</li> <li>Provide measures for emergency reporting and remedy</li> <li>Provide onsite remediation measures (i.e. spill kits)</li> <li>Follow acceptable maintenance and operational practises to ensure consistent, effective and safe performance of the infrastructure</li> <li>Train forecourt staff on implementation of spillage containment emergency plan, including the usage of spill containment kit;</li> <li>Install an emergency shut-off valve when the tanks overfills; and</li> <li>The tank farm area must be unhindered and free from general traffic.</li> </ul>	<p>Owner of the Environmental Authorisation Filling Station Manager SHE Officer</p>

<p>Risk for ground water pollution</p> <ul style="list-style-type: none"> <li>This generally occurs as a result of poor stormwater management (and also leaks and spills referred to above)</li> </ul>	<ul style="list-style-type: none"> <li>Stormwater run-off from the filling station must be directed to catch-pits with sand and oil and grease separators prior to re-use or release in the stormwater drains on site.</li> <li>Waste water areas must be lined by an impermeable material in order to prevent infiltration and contamination of the soils and groundwater within the area.</li> <li>Mitigation measures for leaks and spill supplied in above table are also relevant</li> </ul>	<p>Owner of the Environmental Authorisation Filling Station Manager SHE Officer</p>
<p>Fire risk</p> <ul style="list-style-type: none"> <li>The storage, handling and transport of fuel is potentially dangerous to humans and properties due to the risk of fire and explosions.</li> </ul>	<p>Strict fire management measures must be implemented:</p> <ul style="list-style-type: none"> <li>An Emergency Response and Spill Contingency Plan must be in place and regularly updated and communicated with all personnel.</li> <li>"No smoking" signs must be placed in visible areas on site.</li> <li>No fires may be made for the burning of vegetation and waste.</li> <li>No open fires are to be made on site – cooking facilities must be provided to personnel and labourers.</li> <li>In case of a fire, the local fire department must immediately be contacted.</li> <li>The adjacent land users must be informed and/or involved in case of any fire.</li> <li>It must be ensured that the basic fire-fighting equipment is supplied to the site office, kitchen areas, workshop areas and stores.</li> <li>Welding gas cutting or cutting of metal will only be allowed inside the working/demarcated areas and with appropriate fire-fighting equipment at hand.</li> </ul>	<p>Owner of the Environmental Authorisation Filling Station Manager SHE Officer</p>
<p>Noise impact</p> <ul style="list-style-type: none"> <li>Noise impact would result from petroleum trucks, vehicles braking and accelerating; staff of filling station could be disruptive; music and radio broadcast and to a lesser degree, equipment such as air compressors, air conditioning and refrigeration units.</li> <li>Impact is not expected to be significant.</li> </ul>	<ul style="list-style-type: none"> <li>Provide management rules for personnel.</li> <li>Provide restriction on music and broadcasting over the microphone</li> </ul>	<p>Filling Station Manager</p>
<p>Health and Safety</p> <ul style="list-style-type: none"> <li>This is an issue that requires serious consideration since negligence can result in serious bodily harm and injury and even death.</li> <li>Vapour emissions produced by fuel could be hazardous to human health. These emissions could potentially occur during</li> </ul>	<ul style="list-style-type: none"> <li>The Applicant must at all times ensure at all times that the filling station and operation thereof complies with the requirements for health and safety as prescribed in the Occupational Health and Safety Act, No 181 of 1993, as amended,</li> <li>Personnel must at all times where protective clothing during instances when they can be affected by fuel hazardous materials and odours i.e. when omissions occur during the filling of UST's, during spills, etc.</li> <li>Safety signs must be placed in visible areas all over the site.</li> </ul>	<p>Filling Station Manager SHE Officer</p>

the filling of UST's from the breather pipes, minor spillages and during the dispensing of fuel.	<ul style="list-style-type: none"> <li>• A complete First Aid Kit must be readily available on site and regularly serviced.</li> <li>• Personnel must be trained in health and safety awareness and management of emergency situations.</li> <li>• Measures to minimise vapour emissions include the following: <ul style="list-style-type: none"> <li>○ Providing and utilizing appropriate protective gear and clothing</li> <li>○ Continuous awareness training of personnel and for road tanker drivers delivering fuel to site</li> <li>○ Development of site specific protocols with regards to delivery and use of products and use of the relevant SANS procedures. This is to minimise the possibility of a spill or leak occurring, with associated vapour emissions</li> <li>○ The careful location and elevation of the vent pipes to allow for the maximum dispersion of vapour.</li> <li>○ Tank filler valves must be installed to release smaller quantities of vapour in the atmosphere preventing detrimental health effect.</li> <li>○ Stage 1 Vapor Recovery (from delivery vehicle to tank as well as tank to delivery vehicle) must be installed</li> </ul> </li> </ul>	
Impact on other filling stations in terms of competition in the market	<ul style="list-style-type: none"> <li>• No mitigation apart from the No Go option is proposed for the impact of potential sales losses as a result of the proposed filling station.</li> </ul>	Not relevant

**Risk of the impact if mitigation is not implemented:** The proposed mitigation is specified in the EMP which is legally binding to the Applicant once approved as part of the conditions of the Environmental Authorisation. The risk of the impact not being mitigated is low.

#### SUMMARY OF IMPACT ASSESSMENT DURING THE OPERATIONAL PHASE

Impact Description	Impact Severity Degree (0 - 4)	Extent Local / Regional / National	Duration Temporary / Permanent	Probability <i>Probability it would occur if not mitigated: low / medium / high</i>	Severity of Impact After Mitigation
Leaks	3	Local	Temporary	high	1
Spillages	3	Local	Temporary	high	1
Risk for groundwater pollution	3	Local	Temporary	high	1
Fire Risk	4	Local	Permanent	high	1
Noise Impact	2	Local	Permanent	high	1
Health and Safety	4	Local	Permanent	high	1

## **Annexure C Environmental Authorisation**

*(To be attached once available)*