

**PROPOSED CONSTRUCTION OF A
FILLING STATION AND
CONVENIENCE STORE ON REM. OF
ERF 41, ATLANTIC HILLS, CAPE
TOWN.**

**Environmental Management
Programme:
Construction and Operational Phases**

Report Prepared for
Absshelf 33 (Pty) Ltd

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PROJECT DETAILS

- TITLE:** Atlantic Hills Filling Station Construction and Operational EMPr
- AUTHORS:** KHULA Environmental Consultants
- CLIENT:** Absshelf 33 (Pty) Ltd / Atlantic Hills Co-Ownership
- PROJECT TITLE:** Proposed construction of a filling station and convenience store on Remainder of Erf 41, Atlantic Hills, Giel Basson Drive, Durbanville, Cape Town

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- Appendix A: Site Layout Plan
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Abbreviations

BA	Basic Assessment
CEMP _r	Construction Environmental Management Programme
DEA&DP	The Department of Environmental Affairs and Development Planning
EA	Environmental Authorisation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
NEMA	National Environmental Management Act
OEMPr	Operational Environmental Management Programme
SANS	South African National Standards

1 Introduction

KHULA Environmental Consultants (“KHULA”) has been appointed by Absshelf 33 (Pty) Ltd to undertake the required Basic Assessment (BA) process for the proposed construction of a retail filling station and convenience store on Remainder of Erf 41, Atlantic Hills, Giel Basson Drive, Durbanville, Cape Town. Impact management and mitigation measures have been identified during the process as being required to minimise the potential construction and operational phases of the proposed development. This Environmental Management Programme (EMPr) presents the impact management and mitigation measures and identifies the role-players that will be responsible for implementation of the mitigation measures.

The EMPr has been presented in a format that identifies the impact mitigation outcomes (objectives) in accordance with accepted best practise. This allows for flexibility as various management alternatives may be considered by the implementing agent provided the same outcome is achieved.

As the main civils (bulk infrastructure) is complete and the site has been prepared for building, certain impacts associated with clearing of vegetation, site levelling etc have already occurred and are no longer considered in this EMPr. This EMPr must form part of the contractual agreement between relevant service providers, contractors and the Applicant.

1.1 Receiving Environment

The proposed filling station is located on the corner of Welbeloond/Potsdam Road and Giel Basson Drive (M5) within the existing Atlantic Hills Business Park Mixed-Use industrial development. The Business Park is situated in the northern suburbs of Cape Town, to the east of Dunoon. See Figure 1 below for its locality.



Figure 1: Location of the Atlantic Hills Business Park

The Atlantic Hills development has an existing environmental authorisation (EA) for the development of a Mixed-Use Industrial Park (Amended EA issued on 31 March 2017, DEADP Ref: 16/3/3/5/A5/20/2093/16). The authorisation enables the development of the business park on the site and surrounding properties. In addition, the following documents are applicable to the Business Park as a whole:

- Construction Environmental Management Programme;
- Operational EMPr;
- Atlantic Hills Business Park Stormwater Operations and Maintenance Plan;
- Master Landscaping Framework Plan;
- Conservation Areas Management Plan.

The Atlantic Hills development (which this erf forms part of) has been prepared with roads, services and building platforms. The erf itself is fully serviced and is completely and extensively transformed from any natural state. It is located on the corner of Giel Basson Drive and Welbeloond Road. See Figure 2 below for the locality map.



Figure 2: Locality Map

It should be noted that two conservation areas (known as the Welbeloond Conservation Areas) were identified during the original Environmental Impact Assessment Process and these have now been established. Ownership of these conservation areas lies with the Master Property Owners Association (MPOA), and funding for the management of these conservation areas comes from levies required of each of the various property owners within the Atlantic Hills development. The Renosterveld Hill Conservation Area is located east of the site and is separated by a road, parking, retaining wall and fence. The Kleine Stinke Rivier Conservation Area is located approximately 500m north of the site.

1.2 Project Description

The proposed filling station will comprise of the following:

- Access roads (tarmac surface): 656 m²
- Forecourt (tarmac surface): 1507 m²
- Concrete slabs (pumps): 308 m²
- Concrete containment slabs (above tanks): 89 m²

- Convenience store: 455 m²
- Paving sidewalk (around convenience store): 235 m²
- Parking bays (tarmac surface): 180 m²
- Delivery Bay (tarmac surface): 100 m²
- 4 pumps
- 4 underground fuel tanks of 30m³ each (i.e.120m³ in total)

The remaining area (2993m²) will be landscaped. Refer to Appendix A for a Site Layout plan.

This EMPr addresses both the construction and operational phases of the development and should be read and implemented in conjunction with the documents listed under Section 1.1 above. No decommissioning and/or closure phases are applicable at this time, however should any replacement of tanks or decommissioning be necessary the relevant SANS codes will be implemented to ensure risk minimisation.

3 Environmental Assessment Practitioner

This EMPr was prepared by Monique Sham, an associate consultant of KHULA Environmental Consultants, who undertook the Basic Assessment process for this project.

Monique is an environmental consultant with more than 15 years' experience in the Environmental Management industry. She is an EAPASA Registered Environmental Assessment Practitioner (EAP) and an EAPASA appointed EAP Registration Assessor. She is also certified with the Southern African Institute of Ecologists and Environmental Scientists (SAIE&ES) and is a member of the Environmental Law Association (ELA), the International Association for Impact Assessment South Africa (IAIASa), and the Water Institute of Southern Africa (WISA). Monique holds a BA Degree in Geography & Environmental Science and Media & Communication Studies from Monash as well as a BSc (Hons) degree from Wits in Geography and Environmental Studies and is currently undertaking an LLB degree part-time through UNISA. Monique conducts Basic Assessments and is involved on construction sites with managing and monitoring construction processes in terms of EMPrs. She is also involved in the preparation or rehabilitation plans and monitoring rehabilitation work on sites. Refer to Appendix B for Monique's Curriculum Vitae.

4 Regulatory Overview

4.1 Applicable Legislation

The following legislation is applicable to this project:

- National Environmental Management Act (No. 107 of 1998) (NEMA) and Environmental Impact Assessment (EIA) Regulations (2014).
- Western Cape Land Use Planning Act Regulations, 2015.
- National Building Regulations and Building Standards Act (No. 103 of 1977) and the National Building Regulations as published under GN 1985/R441.
- Hazardous Substances Act (No. 15 of 1973).

4.2 Other Applicable Documentation

The underground storage tanks and related infrastructure will be installed in accordance with the various Health, Safety and Environmental Policies and Standard Specifications of the relevant oil company. In addition, all work at the filling station will be done in accordance with the following SANS standards:

- SANS 10089 Part 3 (2010): The Petroleum Industry Part 3: The installation, modification, and decommissioning of underground storage tanks, pumps/dispensers and pipework at service stations and consumer installations.
- SANS 10089 Part 2 (2007): The petroleum industry Part 2: Electrical and other installations in the distribution and marketing sector.
- SANS 1535 (2007): Glass-reinforced polyester-coated steel tanks for the underground storage of hydrocarbons and oxygenated solvents and intended for burial horizontally.

The SANS codes include various specifications for fuel installations, including the requirements for backfilling excavations, types of tanks to be installed, pipework, fittings, pumps, driveways, registration, fire protection, integrity testing.

Implementation of the above SANS standards will result in the mitigation of a number of potential environmental impacts associated with the proposed filling station.

4.3 EMPr Content Requirements

Appendix 4 of the EIA Regulations of 2014, as amended, provides the content requirements for an EMPr. An EMPr must also comply with Section 24N (2) NEMA, as amended. The table below lists the relevant requirements, indicates whether the relevant information is included

in this report or not, and provides cross-references as to where the relevant information can be found in this report.

Table 1: EMPr requirements in terms of Appendix 4 of the EIA Regulations of 2014, as amended

Appendix 4 of the EIA Regulations of 2014, as amended		Included (Yes, No or N/A)	EMPr Section Reference
1. An EMPr must comply with section 24N of the Act (NEMA) and include -			
(a)	(a) details of -	Yes	Section 2
	(i) the EAP who prepared the EMPr; and	Yes	Section 2
	(ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae	Yes	Appendix F
(b)	a detailed description of the aspects of the activity that are covered by the draft EMPr as identified by the project description;	Yes	Sections 1 and 8
(c)	a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Yes	Figure 2
(d)	a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	Yes	Section 7
	(i) planning and design;		
	(ii) pre-construction and activities;		
	(iii) construction activities;		
	(iv) rehabilitation of the environment after construction and where applicable post closure;		
	(v) where relevant, operation activities;		
(e)	a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Yes	Section 7
(f)	a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to -	Yes	Section 8
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;		
	(ii) comply with any prescribed environmental management standards or practices;		
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and		
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;		
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Yes	Section 8
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Yes	Sections 8 and 5
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Yes	Sections 4 and 8
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Yes	Section 8
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Yes	Section 8
(l)	a programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Yes	Sections 5 and 8
(m)	an environmental awareness plan describing the manner in which	Yes	Section 6
	(i) the Applicant intends to inform his or her employees of any environmental risk which may result from their work; and		
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and		
(n)	any specific information that may be required by the competent authority.	-	-

5 Roles and Responsibilities

The general roles and responsibilities of various parties are outlined below.

5.1 The Developer / Landowner / Applicant

Responsibility for the implementation of the specifications of this EMPr, as well as the conditions contained in the EA, lies with the Developer / Landowner / Applicant. This responsibility could be delegated to contractors for practical purposes, but the Developer / Landowner / Applicant remains legally responsible for the implementation of the EMPr. The Developer / Landowner / Applicant is responsible for ensuring the provisions of this EMPr are implemented.

Prior to the commencement of construction, the developer / landowner / applicant must:

- Appoint an independent and suitably qualified Environmental Control Officer (ECO).
- Ensure that the Contractor is made aware its responsibilities in terms of this EMPr, the applicable documents listed in Section 1.1 and any EA issued for the development.

During the **construction phase** the developer / landowner must:

- Ensure that the ECO monitors the Contractor's implementation of the EMPr, the applicable documents listed in Section 1.1 and any EA issued for the development.
- Ensure that the Contractor is aware of and adheres to the provisions of this EMPr, the applicable documents listed in Section 1.1 and any EA issued for the development.
- Ensure that the Contractor remedy problems timeously and to the satisfaction of the authorities.
- Notify the authorities and the ECO should problems not be remedied timeously.

During the **operational phase**, the landowner must:

- Ensure the continued implementation of the EMPr and the applicable documents listed in Section 1.1.
- Appoint an independent external auditor to audit compliance of the facility against the Operational EMPr once a year for the first five years following completion of the construction phase.

5.2 The Contractor

The Contractor will be appointed by the Developer / Landowner / Applicant for the construction phase of the project. The Contractor will be responsible for:

- Identifying likely aspects that can cause environmental degradation before commencing with any construction activity. Examples of environment aspects include:

- operation of construction machinery
 - site clearing and excavations
 - storage of construction materials
 - waste generation
 - stormwater discharge
 - emission of pollutants into the atmosphere
 - chemical use operations
 - energy use operations
 - water use operations
 - use of natural resources
 - noise generation
- Providing Method Statements to the ECO as stipulated in section 9.3 of this document.
 - Informing all employees and sub-contractors of their roles and responsibilities in terms of the EMPr, the applicable documents listed in Section 1.1 and any EA issued.
 - Ensuring that all employees and sub-contractors comply with this EMPr, the applicable documents listed in Section 1.1 and any EA issued.

The Contractor has a duty to demonstrate respect and care for the environment in which they are operating. The Contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr.

5.3 Contractors Environmental Representative

The contractor will appoint a staff member who is permanently on site during construction as the Environmental Representative who will be responsible for the following:

- Ensuring that the provisions of this EMPr are complied with during the construction phase.
- Attending site inspections with the ECO.

5.4 The Environmental Control Officer (ECO)

The ECO must be a qualified environmental professional or professional firm with the relevant environmental expertise. The ECO will be appointed prior to the commencement of construction activities and for the full duration of the construction phase. The ECO is responsible for:

- Informing key, on-site staff through initial environmental awareness briefing of their roles and responsibilities in terms of the EMPr and the applicable documents listed in Section 1.1.
- Undertaking site inspections twice a month to determine compliance with the EMPr and EA.
- Identifying areas of non-compliance and recommending measures to rectify them in consultation with Developer / Landowner / Applicant and the Contractor.
- Compiling a checklist of areas of non-compliance.
- Ensuring follow-up and resolution of all non-compliance.
- Undertaking a post construction inspection, which may result in recommendations for additional clean-up and rehabilitation measures.

The audit report will be submitted to the developer / landowner and the Contractor for comment prior to submission to the Local Authority and DEA&DP.

5.5 Environmental Auditor

An independent Environmental Auditor (EA) must be appointed by the developer/ landowner. The EA must be commissioned to undertake an environmental audit once a year (i.e. on an annual basis) following the completion of the construction phase. The environmental audits must continue for a period of five years (subject to the provisions of the environmental authorisation which may stipulate an alternative programme). The annual audits are to include:

- Undertaking annual site inspections to determine whether compliance with the Operational EMPr and the EA is being achieved.
- Liaison with the owner, landscaping contractor and civils engineer and obtaining records of operational management obligations as specified in the Operational EMPr and the EA.
- Identifying areas of non-compliance and recommending measures to rectify these in consultation with the operators of the filling station.
- Compilation of annual environmental audit reports and submission of the reports to DEA&DP and the Local Authority.

6 Monitoring

The monitoring programme to be implemented during the construction phase by the ECO will involve:

- Two site inspections per month by the ECO to ensure that the EMPr and the EA is being adhered to.
- Compilation of a post construction Audit Report (close-out report) by the ECO.

The monitoring programme to be implemented during the operational phase by the Environmental Auditor will involve:

- Annual environmental audits for the first five years of operation must be undertaken to ensure that the Operational EMPr and the EA are being adhered to.
- Completion of annual Audit Reports by the Environmental Auditor which will be submitted to DEA&DP.

7 Environmental Awareness Training

Prior to the onset of the construction phase, all on-site personnel must attend an environmental induction presented by the ECO. All attendees must remain for the duration of the course and, on completion, sign an attendance register that clearly indicates participants' names and occupations, a copy of which must be handed to the ECO. Where possible, the presentation needs to be conducted in the language of the employees / contractors. The environmental induction training should, as a minimum, include the following:

- The importance and implications of the EA and this EMPr.
- Emergency preparedness.
- No-go areas (e.g. surrounding properties).
- The significant environmental impacts, actual or potential, of their work activities.
- The environmental benefits of improved personal performance.
- Their roles and responsibilities in achieving conformance with the EMPr and the EA, including emergency preparedness and response requirements.
- Waste management.
- The potential consequences of departure from specified operating procedures.

Thereafter, weekly toolbox talks must be conducted by the on-site environmental representative. Possible toolbox talks topics may include:

- Hazardous material management

- Spill response
- Incident investigations
- Impacts of construction activities
- Mitigation measures required to be implemented when carrying out work activities
- Awareness of emergency and spill response procedures
- Social responsibility during construction
- Housekeeping and the need for a clean, neat, and tidy site.
- Environmental method statements.

All awareness training will be run during normal working hours at a suitable venue provided by the Contractor.

7.1 Temporary site closure

If the site is closed for a period exceeding one week, the contractor, in consultation with the ECO must carry out the following checklist procedure:

Hazardous materials stores:

- Outlet secure/ locked.
- Bund empty (where applicable).
- Fire extinguishers serviced and accessible.
- Secure area from accidental damage e.g. vehicle collision.
- Emergency and contact details displayed.
- Adequate ventilation.

Safety

- All trenches secured (if applicable).
- Fencing and barriers in place as per the Occupational Health and Safety Act (No 85 of 1998).
- Emergency and Management contact details displayed.
- Stockpiles wedged/ secured.

Erosion

- Wind and dust mitigation in place.
- Slopes and stockpiles at stable angle.

Water contamination and pollution

- Cement/bitumen and materials stores secured.
- Toilets empty and secured.
- Refuse bins empty and secured.
- Structures vulnerable to high winds secure.

The ECO will issue a Temporary Site Closure Report to the Local Authority giving them notice of the temporary site closure, reasons for the site closure, expected duration of the closure, and reporting on compliance with the temporary site closure specifications. The ECO should suspend site inspections until such time as construction activities re-commence.

8 Impact Assessment Summary

The Basic Assessment process has identified the following key potential environmental impacts as being associated with the proposed development:

- Traffic impacts associated with increased traffic during both the construction and operational phases.
- Visual impacts associated with dust and waste during the development phase.
- Noise impacts associated with the use of construction machinery during the development phase.
- Soil and groundwater pollution Impacts associated with fuel spills and/or leaks during the operational phase.
- Potential health and safety risks associated with combustion of fuel during the operational phase.

All the above impacts were found to be very low (-ve) with mitigation measures in place.

8.1 Impact Management Outcomes

In order to minimise impacts identified and assessed in the Basic Assessment process, the outcomes of the identified mitigation measures must be achieved. An alternative environmental specification may be selected (with approval of the ECO) provided it can be demonstrated that the same outcome is achieved. The outcomes in relation to the key identified impacts are as follows:

Traffic Outcomes

- Limit deliveries to off-peak times
- Avoid stacking of vehicles waiting for fuel

Visual Outcomes

- Minimise visual intrusion (litter, dust, construction equipment and materials, site camp, scaffolding, appropriate lighting etc.).

Noise Outcomes

- Minimise noise impacts

Soil and Groundwater Outcomes

- Prevent pollution.

Health and Safety Outcomes

- Prevent fires.

9 Environmental Specifications

The Construction EMPr aims to address mitigation measures pertaining to the construction phase as identified during the course of the Basic Assessment.

9.1 Glossary of Terms for Impact Table

- “Activity” is the relevant action that will take place on the site, e.g. site clearance, etc.
- An “environmental aspect” is a feature or characteristic of an activity that affects or can affect the environment.
- An environmental impact is a change to the environment. Such change can be positive or negative.
- Environmental impacts are caused by environmental aspects.
- An environmental objective is the specific environmental goal.
- An environmental target is a detailed performance requirement. Environmental targets are derived from environmental objectives and are used to achieve these objectives. Targets should be measurable where possible.

9.2 Construction Phase EMPr

The EMPr aims to address the potential environmental impacts and provides mitigation measures where these cannot be avoided pertaining to the construction phase on the site. Table 2 lists the environmental management specifications required for the duration of the construction period:

Table 2: Environmental Management Specifications – Construction Phase

PLANNING AND CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
1.	Construction activities (stormwater management)	Water quantity impacts associated with stormwater runoff	Prevent impairment of stormwater run-off & manage run-off.	<ul style="list-style-type: none"> Implement the approved stormwater and operations maintenance plan. 	Contractor	Check that stormwater facilities are in good working order (monitoring: weekly) <u>Responsible Person/Party:</u> Contractor	
		Water quality impacts associated with stormwater runoff	Prevent contaminants entering stormwater system.	<ul style="list-style-type: none"> Conduct cement works within contained area (i.e. either bunded or impermeable layer with no wash off). Store cement in waterproof containers. Remove all cement bags from site on a daily basis and store in waterproof containers prior to disposal. Drip trays to be used during any re-fuelling on site. All machinery to be regularly checked for leaks and repaired. All hazardous materials to be stored in appropriately bunded areas. 	Contractor	All cement works be contained and no runoff of contaminated water into stormwater system or surrounding properties. <u>Responsible Person/Party:</u> Contractor	

PLANNING AND CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
				<ul style="list-style-type: none"> Surrounding road network to be swept frequently to ensure no sediment from the site enters stormwater system. 			
2.	Site establishment and construction phase	Visual intrusion	Minimise construction phase impacts related to visual intrusion	<ul style="list-style-type: none"> Store and keep excavation machinery and cranes within the boundaries of the development area. Cover construction materials that are stored on site, where practicably possible. Screen through the appropriate use of construction hoarding and ensure that the hoarding is dark in colour and free of excessive branding and that hoarding is kept within the boundaries of the site. Implement dust suppression. Ensure that excavation machinery and trucks entering and leaving the site do not leave any rubble, sand, rock, branches or other unwanted material on roads leading to the site. Keep site lighting to a minimum and prevent the use of flood type lighting as far as possible. Control erosion immediately to prevent visual scarring of the landscape. Maintain an effective waste management programme. Ensure that no littering is allowed on site. Provide sufficient lidded waste bins (to prevent wind-blown pollution) and empty bins prior to being over-full. Separate and recycle waste, where practicably possible. 	Contractor	<p>Contractor is to ensure that the mitigation measures are employed on a continuous basis and checked daily by the on-site ER.</p> <p>Implemented mitigation measures are to be checked bi-monthly by the ECO.</p>	

PLANNING AND CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
				<ul style="list-style-type: none"> • Ensure that separate waste bins are available for hazardous material waste and ensure that this waste is disposed of as hazardous material. • Place chemical toilets at least 50 metres from any wetland. • Ensure that chemical toilets are serviced at least once a week, and that records thereof retained. • Ensure that the hazardous materials store is bunded and roofed to prevent ingress of rain area and/or in drip trays. Ensure that Material Safety Data Sheets are easily available for all hazardous materials. • Inspect fuel-driven machinery and plant for leaks daily, and use drip trays should a leak be detected. Leaks must be repaired as soon as is practicably possible. • Make use of drip trays when refuelling. • Ensure that as spill kit is available on site and that hazardous material spills are reported, cleaned up, and the affected area remediated immediately. Dispose of resultant materials as hazardous waste. 			
3.	Site establishment and construction phase	Noise impacts	Minimise noise impacts	<ul style="list-style-type: none"> • Ensure that plant and machinery are serviced regularly. • Limit working hours to standard construction hours (07h00 to 17h00) with no work occurring on Sundays. 			
4.	Site establishment and	Health and safety risks	Prevent fires	<ul style="list-style-type: none"> • Ensure that adequate training is provided to all on-site personnel as to their roles and responsibilities should a fire occur. 	Contractor	Contractor is to ensure that the mitigation measures are	

PLANNING AND CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
	construction phase			<ul style="list-style-type: none"> Hot works (potential ignition sources) on site should be strictly controlled once fuel infrastructure has been installed. Ensure that smoking is prohibited in the vicinity of flammable substances. Ensure that smoking only takes place at designated smoking areas, and that cigarette butts are disposed of in lidded bins. Do not allow open fires for heating and cooking. Ensure that adequate fire-fighting equipment is available on site, in particular where flammable substances are being stored or used. Ensure that any welding or other sources of heating of materials (hot works) are done in a controlled environment and under appropriate supervision, and in such a manner as to minimise the risk of fires and/or injury to personnel. Ensure that a working fire extinguisher is immediately at hand if any hot works are undertaken e.g. welding, grinding, gas cutting etc. Place telephone numbers of emergency services, including the local firefighting service, in visible areas on site. Ensure that the Health, Safety and Environmental Policies and Standard Specifications of the relevant oil company are employed. Implements an approved emergency preparedness and response plan as per industry standard. 		<p>employed on a continuous basis.</p> <p>ECO to check that the mitigation measures are satisfactorily employed on each site visit.</p>	

PLANNING AND CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
				<ul style="list-style-type: none"> Improved an approved health and safety plan as per industry standard. Ensure that the relevant SANS codes are adhered to. 			
5.	Site establishment and construction phase	Soil and groundwater impacts	Prevent pollution	<ul style="list-style-type: none"> Ensure that adequate training is provided to all on-site personnel as to their roles and responsibilities should a spill occur. Ensure that appropriate equipment and resources are on site to deal with any spills that may occur (spill kit, etc.). Ensure that the Health, Safety and Environmental Policies and Standard Specifications of the relevant oil company are employed. Implement an approved emergency preparedness and response plan as per industry standard. Implement an approved health and safety plan as per industry standard. Ensure that the relevant SANS codes are adhered to. 	Contractor	<p>The Contractor is responsible for ensuring that adequate training is undertaken, and that required resources are available.</p> <p>The ECO to check that the training has taken place and that the resources are available on site.</p>	
6.	Site establishment and construction phase	Traffic impacts	Limit traffic impacts	<ul style="list-style-type: none"> Time deliveries of construction material to the site during non-peak times. Monitor all deliveries and ensure that no stacking of vehicles takes place in the surrounding road network. 	Contractor	<p>Contractor is to ensure that the mitigation measures are employed on a continuous basis.</p> <p>ECO to observe the efficacy of the mitigation measures.</p>	

9.3 Method Statements

The following method statements shall be provided by the Contractor within 14 days of the receipt of the Letter of Acceptance and prior to the activity covered by the Method Statement being undertaken:

- Logistics for the environmental awareness course for all the Contractors employees.
- Emergency procedures for fire, accidental leaks and spillages of hazardous materials including:
 - who shall be notified in the event of an emergency, including contact numbers for the relevant local authority,
 - where and how any hazardous spills will be disposed of,
 - the size of spillage which the emergency procedures could contain, and
 - location of all emergency equipment and an indication of how regularly the emergency equipment will be checked to ensure that it is working properly.
- Location and layout of the construction camp in the form of plan showing offices, stores for fuels and explosives, vehicle parking, access point, equipment cleaning areas and staff toilet placement.
- Location, layout and preparation of bitumen/concrete batching facilities including the methods employed for the mixing of bitumen/concrete and the management of runoff water for such areas. An indication shall be given of how bitumen/concrete spoil will be minimised and cleared.
- Method of undertaking earthworks, including spoil management, erosion, dust and noise controls.
- Wastewater management system and disposal methods for contaminated water and soil.
- Management measures to be undertaken in instances where traffic flows may be interrupted.
- Measures to be put in place during temporary closure periods, e.g. December school holidays.

Refer to Appendix C for a Method Statement Pro Forma.

9.4 Record Keeping

The project manager and the ECO will continuously monitor the contractor's adherence to the impact mitigation measures and the ECO will issue to the contractor a notice of non-

compliance whenever transgressions are observed. The ECO should document the nature and magnitude of the non-compliance in a designated register, the action taken to discontinue the non-compliance, the action taken to mitigate its effects and the results of the actions. The non-compliance shall be documented and reported to the project manager and/or landowner in a monthly report.

Copies of any EA and EMPs on the project shall be kept on site and made available for inspection by visiting officials from the employer or relevant environmental departments.

9.5 Penalties

Non-compliance with the conditions of the EMP will constitute a breach of Contract. The ECO, in consultation with the project manager/landowner, can impose spot fines on the Contractor for any contraventions of the EMP. By imposing spot fines on individuals guilty of contravening the EMP, the ECO will be able to ensure that the requirements of the EMP are taken seriously not only by the management personnel on site, but also by the labour. Below are ranges of spot fines for different contraventions of the EMP.

Transgression / Non-compliance	Fine
Any employees, vehicles, plant, or thing related to the Contractor's operations operating within the designated boundaries of a "No-Go" area without an approved Method Statement.	R5000
Persistent and un-repaired oil leaks from machinery.	R2000
Persistent failure to monitor and empty drip trays timeously.	R1000
The use of inappropriate methods for refuelling.	R1000
Litter on site associated with construction activities.	R1000
Deliberate lighting of illegal fires on site.	R5000
Employees not making use of the site ablution facilities.	R2000
Failure to empty waste bins on a regular basis.	R1000

For each subsequent similar offence the penalty shall be doubled in value to a maximum value of R50 000. Any money obtained via the fining system must be paid into the Atlantic Hills Environmental Liaison Committee ("ELC") fund.

9.6 Declaration by Parties

Developer / Owner: _____

I, _____

Representing the Developer /Owner record as follows:

I/we have read and understood this Environmental Management Programme.

I am aware of my responsibilities in terms of complying with, enforcing and implementing the Environmental Management Programme.

I undertake to comply with those requirements of the applicable environmental laws, approvals and obligations arising out of the Environmental Management Programme in the discharging of my obligations.

Signed: _____

Date: _____

Place: _____

Witness: _____

Main Contractor

The Contractor will not be given right of access to the Site until this form has been signed

I/ we, {Contractor} record as follows:

- 1. I/ we, the undersigned, do hereby declare that I/ we am/ are aware of the increasing requirement by society that construction activities shall be carried out with due regard to their impact on the environment.
- 2. In view of this requirement of society and a corresponding requirement by the Employer with regard to this Contract, I/ we will, in addition to complying with the letter of the terms of the Contract dealing with protection of the environment, also take into consideration the spirit of such requirements and will, in selecting appropriate employees, plant, materials and methods of construction, in-so-far as I/ we have the choice, include in the analysis not only the technical and economic (both financial and with regard to time) aspects but also the impact on the environment of the options. In this regard, I/ we recognise and accept the need to abide by the “precautionary principle” which aims to ensure the protection of the environment by the adoption of the most environmentally sensitive construction approach in the face of uncertainty with regard to the environmental implications of construction.
- 3. I/we have signed the Declaration of Understanding with respect to the Environmental Management Programme

Signed Date.....

CONTRACTOR

9.7 Operational Phase EMPr

The EMPr also aims to address the potential environmental impacts associated with the operational phase of the development and provides mitigation measures where these cannot be avoided. Table 3 lists the environmental management specifications required for the duration of the operational period.

Table 3: Environmental Management Specifications – Operational Phase

OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
1.	Waste management	Lack of waste management	Maintain efficient waste management	<ul style="list-style-type: none"> Sort waste into general waste, hazardous waste and recyclables. Ensure that hazardous waste and recyclables are removed and recycled/disposed of by licensed waste management company. Forecourt drainage infrastructure to be regularly checked and cleaned when necessary. Should contaminated material be suspected or identified, any sediment should be handled appropriately (with the risk of contamination considered.) 	Operator	Maintain records (waste disposal slips/safe disposal slips to be supplied by waste management company)	
2.	Operating activities	Health and safety risks	Prevent fires	<ul style="list-style-type: none"> Ensure that adequate training is provided to all on-site personnel as to their roles and responsibilities should a fire occur. Ensure that smoking only takes place at designated smoking 	Operator	Emergency plan and Health and Safety Plan to be available on site	

OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
				<p>areas, and that cigarette butts are disposed of in lidded bins.</p> <ul style="list-style-type: none"> • Ensure that adequate fire-fighting equipment is available on site. • Implements an approved emergency preparedness and response plan as per industry standard. • Improved an approved health and safety plan as per industry standard. • Ensure that the relevant SANS codes are adhered to. 			
3.	Operating activities	Traffic impacts	Minimise traffic impacts	<ul style="list-style-type: none"> • Ensure that underground tank filling takes place during non-peak use times to avoid internal traffic flow problems. 	Operator	Filling station manager	
4.	Operating activities	Visual impacts	Minimise visual impacts	<ul style="list-style-type: none"> • Ensure that all signage complies with the local authority external signage requirements. • Avoid spot lights directed at the surrounding road network – downlighting is preferred. 	Operator	Operator	
5.	Operating activities	Soil and groundwater impacts	Prevent pollution	<ul style="list-style-type: none"> • Maintain the approved stormwater infrastructure and implement operations maintenance plan. 	Operator	The Operator is responsible for ensuring that adequate training is undertaken, and	

OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME							
NO.	PROJECT ACTIVITY (Environmental Aspect)	POTENTIAL IMPACT	IMPACT MANAGEMENT OUTCOME	MITIGATION / MANAGEMENT MEASURES	RESPONSIBLE PARTY/PERSON (to implement mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	For Monitoring Purposes only (Successfully Implemented / Corrective action required)
				<ul style="list-style-type: none"> • Ensure that adequate training is provided to all on-site personnel regarding proper dispensing practices and roles and responsibilities should a spill occur. • Ensure that appropriate equipment and resources are on site to deal with any spills that may occur (spill kit, etc.). • Implements an approved emergency preparedness and response plan as per industry standard. • Improved an approved health and safety plan as per industry standard. • Ensure that the relevant SANS codes are adhered to, including regular stock reconciliations. 		<p>that required resources are available.</p> <p>Stock reconciliation records to be made available to the EA.</p>	

10 Conclusion

It should be noted that the EMPr should be regarded as a living document and changes should be made to the EMPr as required by project evolution while retaining the underlying principles and objectives on which the document is based.

The compilation of the EMPr has incorporated impacts and mitigation measures from the BAR. By identifying the activity, impacts, mitigation measures, responsibilities and verification responsibility, the EMPr has provided a platform on which both the construction phase and the operational phase impacts can be minimised and monitored.

Appendices

APPENDIX A
SITE LAYOUT PLAN

APPENDIX B
CV OF EAP

Curriculum Vitae
of
MONIQUE TERESE Sham
Associate Consultant



Integrated Environmental Management • Natural Resource Management Planning

CONTACT DETAILS

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PERSONAL INFO

Full Names	Monique Terese Sham
Date of Birth	19 December 1983
Nationality	South African
Languages	English, Afrikaans
Identity Number	8312190068081

ACADEMIC QUALIFICATIONS

BA (Geography & Environmental Science)	Monash South Africa	2004
BSc Honours (Geography)	University of the Witwatersrand	2005
MSc (Environmental Management, coursework complete)	University of JHB	2006 to present
Tree Identification course	Walter Sisulu Botanical Gardens	2005
ISO 14001 Environmental Auditing Course	University of JHB	2006
Microsoft Office Project 2007	New Horizons Computer Learning Centre	2007

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS

Registered EAP with EAPASA (2019/235)
Registered EAPASA assessor
Member of the South African International Association for Impact Assessment (IAIASA)
Member of the International Association for Impact Assessment (IAIA)
Member of the Water Institute of South Africa (WISA)

FIELDS OF EXPERTISE

Years experience

Environmental Management (including EIA's & EMP's)	15 years
Public Participation Facilitation	15 years
Environmental Control Officer	15 years
Environmental Training	5 years

<u>EMPLOYMENT HISTORY</u>
2008 – present: independent consultant & associate to KHULA Environmental Consultants.
2007 – 2008: SRK Consulting. Environmental Consultant.
2006 – 2007: African Environmental Centre. Environmental Educator.
2005: City of Johannesburg (4 month contract). EIA Reviewer.
2004 – 2007: Holgate & Associates Environmental Management Services. Environmental Consultant.

APPENDIX C
METHOD STATEMENT PROFORMA

METHOD STATEMENT PRO FORMA

CONTRACT:.....

DATE:.....

PROPOSED ACTIVITY (give title of method statement and reference number from the EMP):

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:

End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated maps and plans where possible):

Note: please attach extra pages if more space is required