

**ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED  
KWAZINQAMU CROSSING RETAIL CENTRE ON PORTION OF THE FARM ZWAARTKOP  
LOCATION NO. 4669 AT ELANDSKOP / TAYLORS HALT, KWAZINQAMU AREA, WITHIN  
MSUNDUZI LOCAL MUNICIPALITY, PIETERMARITZBURG, KWAZULU - NATAL**

**ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)**

Report prepared for

**FUNDATION ONE (PTY) LTD**

Prepared by

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**A. ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) WHO PREPARED THE ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr):**

**1. (1) An EMPr must comply with section 24N of the Act and include -**

**(a) Details of -**

**(i) the EAP who prepared the report:**

Business name of EAP:	<b>Mondli Consulting Services</b>		
Physical address:	<b>6 Joseph Avenue, New Era House, Suite 9, Glen Anil, Durban North, 4051</b>		
Postal address:	<b>P O Box 22536, Glenashley</b>		
Postal code:	<b>4022</b>	Cell:	<b>0824187708</b>
Telephone:	<b>0826799841</b>	Fax:	<b>(031) 5725647</b>
E-mail:	<b>mondlib@webmail.co.za</b>		

**(ii) The expertise of the EAP (including curriculum vitae)**

<b>Name of representative of the EAP</b>	<b>Education qualifications</b>	<b>Professional affiliations</b>	<b>Experience at environmental assessments (years)</b>
BM. Mthembu	Diploma in Nature Conservation Masters Degree (Environmental Management Dissertation) Bachelor of Laws (LLB)	EAPASA registered EAP: No. 2018/168 Society of South African Geographers (Membership No. 28/09)	Has been involved in environmental and conservation field for over 20 yrs. Conducted EIAs for over 17 years including Strategic Environmental Assessment. Has been involved in the

			review and commenting on development projects impacting on the environment.
SI Thwala	National Diploma in Analytical Chemistry & Bachelor of Science degree majoring in Geography and Computer Science. He has done many courses in environmental management.	None.	Three -year experience in environmental monitoring, and inspection of environmental projects. Assisting in environmental assessment. Training in environmental management.

**(B) A DETAILED DESCRIPTION OF THE ASPECTS OF THE ACTIVITY THAT ARE COVERED BY THE EMPr AS IDENTIFIED BY THE PROJECT DESCRIPTION;**

The environmental management programme covers mainly aspects that directly relates to the construction of KwaZinqamu Crossing Retail Centre at Elandskop / Taylors Halt, KwaZinqamu comprising the anchor shop, line shops, anchor yard, office, electrical room, toilets, bin area and parking area. All buildings are single storey.

These are aspects like environmental awareness, soil erosion and contamination, removal of ground cover, spillage, surface water pollution, groundwater contamination, air pollution, stockpiling, location of the construction camp, solid waste, alien plants, noise, traffic management, health and safety, heritage, visual impact, stormwater and traffic issues. These aspects are described and covered in detail throughout the EMPr.

**(C) A MAP AT AN APPROPRIATE SCALE WHICH SUPERIMPOSES THE PROPOSED ACTIVITY, ITS ASSOCIATED STRUCTURES, AND INFRASTRUCTRE ON THE ENVIRONMENTAL SENSITIVITIES OF THE PREFERED SITE, INDICATING ANY AREAS THAT SHOULD BE AVOIDED, INCLUDING BUFFERES;**

There are no sensitive areas on site, and no specific areas that need to be avoided. *See attached site map and site development plan.*

**(D) A DESCRIPTION OF THE IMPACT MANAGEMENT OBJECTIVES, 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 -**

The main aim and objective of the monitoring exercise is to ensure the appraisal of environmental performance in line with the Environmental Management Programme (EMPr), EIA Regulations and National Environmental Management Act (NEMA) No. 107 of 1998 as amended. The Department of Economic Development, Tourism and Environmental Affairs is responsible for ensuring compliance to NEMA. EMPr is also meant to provide objective feedback to Foundation One (Pty) Ltd during project construction and beyond, by making appropriate recommendations for remedial interventions where appropriate.

The monitoring deals with conformance and non-conformance measured against the EMPr. Any non-compliance observed during the construction period will be followed by an immediate remedial intervention. The environmental audit and monitoring will primarily focus on evaluating the measure of compliance with statutory requirements within the project site.

The identified impacts and risks will be managed and mitigated throughout the following phases of development:

### ***(i) planning and design;***

#### *Impact*

Congestion and overcrowding by project technical personnel.

### ***(ii) Pre-construction activities;***

#### **Environmental awareness and partnerships**

#### *Impact*

Ignorance of the EMPr prescripts resulting in environmental degradation.

#### *Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

### ***(iii) construction activities;***

#### **(a) The storage facility**

#### *Impact*

Environmental pollution that may result in soil contamination and environmental pollution in case of leakages and spills.

#### **(b) Solid waste and littering**

*Impact*

The possible pollution of the environment.

**(c) Concrete mixing**

*Impact*

Soil contamination.

**(c) Chemical materials**

*Impact*

Environmental pollution relating to soil and surface water.

**(e) Management of water, sediments and stormwater**

*Impact*

Soil erosion and surface water pollution.

**(f) Air pollution**

*Impact*

Air pollution and nuisance.

**(g) Noise control**

*Impact*

Noise pollution to the settlement, passing local people and passersby.

**(h) Earthworks and Soil**

*Impact*

Soil erosion and opportunistic invader plant species growing after earthworks.

**(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*Impact*

Siltation.

**(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

**(k) Construction camp**

*Impact*

The unsuitable location can result in environmental degradation.

**(l) Traffic Management**

*Impact*

Traffic congestion and increase in the vicinity of the project site during construction.

**(m) Heritage impact**

*Impact*

Impact on heritage resources and places to which oral history is attached.

**(n) Visual impact**

*Impact*

Nuisance to the neighbouring households and the public.

***(iv) rehabilitation of the environment after construction and where applicable post closure; and***

**(a) Clearing construction site**

*Impact*

Environmental and site pollution.

**(b) Signing off**

*Impact*

Environmental pollution and degradation left on site after construction.

**(c) Landscaping**



*Impact*

Soil erosion.

*Impact*

Possibility of soil contamination.

**(v) where relevant, operation activities;***Impact*

Environmental pollution and possible degradation.

*Impact*

Ground water contamination

See also operational phase under (O) below.

**(F) A DESCRIPTION OF PROPOSED IMPACT MANAGEMENT ACTIONS, IDENTIFYING THE MANNER IN WHICH THE IMPACT MANAGEMENT OUTCOMES CONTEMPLATED IN PARAGRAPH (D) WILL BE ACHIVED, AND MUST, WHERE APPLICABLE, INCLUDE ACTIONS TO -**

***(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;***

***(i) planning and design;***

*How impact management outcomes will be achieved*

The project planners are expected to be considerate and ensure that their activities are not detrimental to both social and physical environment. The environmentalist is already involved to ensure all designs reflect environmental principles.

The technicians working on site must be sensitized about possible environmental impacts, in order to be considerate at all times when working on site. Therefore, the Msunduzi Local Municipality, Builder and the environmentalists and all affected specialists and stakeholders must be involved during this phase.

The project must ensure sustainable development in balancing social, economic and environmental aspects.

***(ii) Pre-construction activities;***

*Impact*

Ignorance of the EMPr and environmental principles; resulting in environmental degradation.

## **Environmental awareness and partnerships**

### *How Impact management outcomes will be achieved*

This EMPr will be discussed with all interested and affected parties and contractors to ensure that awareness of events and activities that have a negative impact on the environment are understood, and adhered to. This will be done by educating the stakeholders about the environment, and the crash course for the contractor. Compliance will be emphasized to the developer, and the Compliance Section of EDTEA is also expected to do inspections, as they deem appropriate and necessary.

### *Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

### *How Impact management outcomes will be achieved*

- The main contractor and relevant stakeholders will have to be familiar with the contents of the Environmental Management Programme (EMPr) to be able to comply with the aforementioned document during all project phases.
- The building contractor and all personnel that will be involved in the construction phase of this project will be taken through a crash course on environmental awareness and EMPr.

### *Impact*

Noncompliance to the EMPr document; resulting in environmental degradation.

### *How Impact management outcomes will be achieved*

- The EMPr will be signed by the contractor on site.
- All stakeholders including employees of the contractors on site need to be familiar with the contents of the EMPr and the construction protocol.
- The EMPr document must be available on site at all times, to ensure monitoring by organs of state with jurisdiction on site.
- This EMPr will be discussed with stakeholders to ensure that awareness of activities that have a negative impact on the environment are clarified.
- All relevant parties, including the applicant, all project managers, contractors and sub-contractors must be made aware of their responsibility for compliance with the provisions for *Duty of Care and remediation of environmental damage* contained in Section 28 of the National Environmental Management Act, Act 107 of 1998.

### ***(iii) construction activities;***

#### **(a) The storage facility during construction**

### *Impact*

Environmental pollution likely to result in soil contamination and environmental pollution in case of leakages and spillages.

*How Impact management outcomes will be achieved*

- This will be mitigated by constructing a storage facility that is roofed and properly paved to store all the contractor's tools and materials during construction phase.
- The storage facility will prevent direct sun which may cause certain materials to explode, and rain from flushing materials that may later contaminate the soil and surface water. The storage facility will also help in safe storage preventing accidental falling of uncontained materials and liquids that may not have been sealed safely.
- The liquid materials must be tightly closed and sealed to prevent spillage in case of accidental falling.
- The storage areas must be 150 metres away from any watercourse.
- The storage areas and stormwater drains will be over 10 metres away from the buildings on site and boundaries.
- The storage areas must be designated, demarcated and fenced in a secured manner.

### **(b) Solid waste and littering**

*Impact*

The possible pollution of the environment resulting from litter and waste.

*How Impact management outcomes will be achieved*

- Solid waste must be disposed of at the nearest municipal landfill site.
- Solid waste must be disposed of in an environmentally acceptable manner during construction to minimize pollution of the environment.
- Rubbish drums and refuse plastic bags will have to be made available for litter during the day, to be cleared and disposed of at the municipal landfill site at appropriate intervals as advised by the Environmental Control Officer.
- All construction spoil must be disposed of at the municipal landfill site.
- No burning of refuse must take place on site.
- A designated refuse and recycling area must be provided within the project complex, which must be roofed, curbed, graded, and must be of adequate size to accommodate sufficient number of bins required for the premises.

### **(c) Concrete mixing**

*Impact*

Soil contamination.

*How Impact management outcomes will be achieved*

- All concrete mixing that is “not ready mixed” must be carried out on wooden boards in a lined bunded area so that cement slurry does not escape out of the area. This will also prevent contamination of the soil.
- At the end of each day's construction operations cement spoil and rubble must be collected and placed in appropriate containers for later disposal.

#### **(d) Chemical materials**

##### *Impact*

Environmental pollution including soil and surface water.

##### *How Impact management outcomes will be achieved*

- Chemical materials like paint, turpentine, solvents, cement and the like must be stored appropriately in line with the provisions of Hazardous Substances Act (Act 15 of 1973).
- These must not be allowed to pose risk to the surrounding environment, and such storage areas must be located outside of the 1:100-year floodline of a river / watercourse or such storage must not be closer than 150 metres from the water course / river.
- Access to these areas must be controlled, and temporary bunds must be constructed around chemical or diesel storage areas to contain possible spillages.
- Any spill must be reported to the relevant authorities as soon as possible i.e. Msunduzi Local Municipality, Umgungundlovu District Municipality, Department of Water and Sanitation and the KZN Department of Economic Development, Tourism and Environmental Affairs.
- Oil leaks from heavy machinery and vehicles must not be allowed to contaminate soil and the environment. This must be done by properly servicing the machinery to prevent unnecessary oil leaks, as well as preventing any servicing of vehicles and machinery on site.
- In case of oil leak that contaminate the soil, such soil must be removed and disposed of appropriately as advised by the ECO.

#### **(e) Management of water, sediments and stormwater**

##### *Impact*

Soil erosion and ground water pollution.

##### *How impact management outcomes will be achieved*

- Stormwater must be in line with the design and adhere to all Engineers stipulations.
- Compilation of a Storm Water Management Plan (SWMP) and designs to the Engineer and Municipal specifications.
- It must incorporate pollution prevention measures.
- Appropriate traps and drains must be incorporated to prevent litter from entering the storm water drains.
- On site attenuation must be in the form of rainwater harvesting tanks.

- Any soil stockpiles created are to be maintained as flat as possible, avoiding side slopes.
- Storm water leaving the premises shall not be polluted by any substance whether such a substance is a solid, liquid, gas vapour or any combination of these.
- After construction, the site must be graded or paved to ensure free flow of runoff and to prevent ponding of water.
- The design of the stormwater management system should ensure that accumulated surface water is collected and disposed of in a responsible manner.

#### **(f) Air pollution**

##### *Impact*

Air pollution.

##### *How impact management outcomes will be achieved*

- It is important that the requirements of the atmospheric Pollution Prevention Act (APA) (Act No. 45 of 1965) and National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) be adhered to.
- Dust from the operations must be minimized by regularly spraying with water during construction.

#### **(g) Noise control**

##### *Impact*

Noise pollution to the settlement and passing local people.

##### *How impact management outcomes will be achieved*

- Noise Control Regulations (Regulations 154, 10 January 1992) of the Environmental Conservation Act (Act No. 73 of 1989) must be adhered to.
- Construction operations must be restricted to daylight period, Monday to Saturday, and must adhere to legally stipulated hours (7.00 – 18.00).
- The use of equipment that is less noisy must be encouraged.
- Workers using noisy equipment must be informed about the need to minimize noise and its impact on the general surrounding environment.
- The neighbouring households must be informed about noise possibilities.

#### **(h) Earthworks and Soil**

##### *Impact*

Soil erosion.

##### *How impact management outcomes will be achieved*

- Soil generated during digging of trenches must be backfilled immediately or at least within 48 hours.
- All soil left after construction must be removed.
- No soil must be left in heaps after the construction.
- Any excessive soil that was unable to be used or backfilled will have to be taken to the municipal landfill site or disposed of in an environmentally acceptable manner as per the advice of an environmental control officer.
- It is recommended that all earthworks be carried out in accordance with SABS 1200 (current version).
- Stripped areas must not be left bare for extended periods.
- Wind screening and storm water control must be undertaken to prevent soil loss from the site.
- Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the site establishment phase e.g. top soil is to be conserved by means of covering stockpiles with suitable material to prevent sediment loss via wind / water.
- Msunduzi Environmental Management Unit has to be informed 14 days before the commencement of any site works occurring (clearing of the site would be considered commencement of activities).

#### **(i) Vegetation / Groundcover**

##### *Impact*

Soil erosion.

##### *How impact management outcomes will be achieved*

- Planting of grass and ground cover.
- Should any area be left bare during construction, it must be planted with suitable ground cover to prevent possible soil erosion.
- It is critical to keep and maintain the grass cover after all earthworks operations.
- Landscaping has to be done on project completion.
- Landscape plan must be compiled and incorporate indigenous plants.
- It is recommended that Alien Invasive Plant Species within the proposed developmental footprint be removed, and areas, which would be cleared / disrupted should be re-vegetated, post construction.
- Should alien plant species reoccur during and post construction, they must be removed.

#### **(j) Health and Safety**

##### *Impact*

Unhealthy and unsafe environment.

##### *How impact management outcomes will be achieved*

- All requirements of the Occupational Health and Safety Act (Act No. 85 of 1993) must be complied with.

- Compliance with Food Regulations R962 and Tobacco Control Act
- Compliance with all South African National Standards (SANS).
- Provision of mobile toilets placed some 150 metres away outside of the 1: 100-year flood line. These toilets must be regularly monitored on daily basis and sewerage sludge must be disposed of at a nearest registered Waste Water Treatment Works.
- Fire extinguishers must be kept at appropriate points, not only during construction phase, but even during operational phase for immediate action in case of fire.
- Fire extinguishers must be readily available onsite and easily accessible.
- Firefighting equipment must comply with SANS 1151 and must be inspected regularly.
- Assurance must be made that the staff on site are familiar with fire procedures, and the use of fire equipment.
- In line with Health Requirements the mobile toilets will have to be provided on site during construction, to cater for human excrement.
- Such toilet facilities must be located outside of the 1: 100-year floodline or, must not be placed closer than 150 metres from the water course / river. These toilets must be monitored on daily basis and sewerage sludge must be disposed of at a nearest registered Waste Water Treatment Works.
- The site will have to be kept clean and free of litter by continuously disposing waste at the municipal landfill site.
- Safety officer must be appointed to deal with all safety issues on daily basis during construction.
- Safety induction must be done on commencement of construction.
- Protective clothing must be worn by workers at all times.
- Safety file and Safety officer to be on site, especially during construction phase.
- The mobile toilets on site must be kept clean and serviced regularly.
- No smoking may be allowed onsite, especially near flammable materials.
- An Emergency Response Plan (ERP) must be implemented for the site, for emergency procedures. The ERP must include emergency contact numbers.
- Staff must be trained adequately to avoid and handle high risk situations.
- Any spill must be reported to the relevant authorities as soon as possible i.e. Msunduzi Local Municipality.
- There must be full compliance to directions issued by the Department of Environmental Affairs dated 5 June 2020 regarding measures to address, prevent and combat the spread of Covid 19 related to NEMA permits and licenses in particular provisions of Annexure 3.
- All applicable health and safety protocols in terms of section 27 (2) of the Disaster Management Act must be followed.

### **(k) Construction camp**

#### *Impact*

The unsuitable location is likely to result in environmental degradation and surface water pollution.

#### *How impact management outcomes will be achieved*

- Located at a distance of 150 metres away from any watercourse.
- As mentioned above adequate provision for sanitation must be made in the form of mobile toilets, to cater for human excrement from residents of the construction camp. These must be emptied on regular basis.

### **(l) Traffic Management**

#### *Impact*

Congestion and increased traffic flow.

#### *How impact management outcomes will be achieved*

- The recommendations of the Traffic Impact Assessment must be strictly adhered with.
- Vehicles must adhere to the speed limit of 40 kms per hour during construction.
- Construction vehicles must be properly marked with “construction vehicle” signs, and drivers must be given clear work instructions.
- No construction vehicles must obstruct entrances to any neighbouring properties.
- Pointsmen to be used to direct traffic flow to and from the site.

### **(m) Heritage impact**

#### *Impact*

Impact on heritage resources that may be identified during earthworks.

#### *How impact management outcomes will be achieved*

- Amafa must be contacted if any heritage objects are identified during earthmoving activities, and all development must cease until further notice.
- Amafa must be contacted if any graves or heritage objects are identified during construction and the following procedure is to be followed:
  - Stop construction
  - Report finding to local police station
  - Report to Amafa to investigate
- Sources of all-natural materials (including topsoil, sands, natural gravels, crushed stone, asphalt etc) must be obtained in a sustainable manner and in compliance with the heritage legislation.
- No archaeological sites, nor artefacts, were noted in the study area, therefore no further mitigation is required.
- Chance Find Protocol has been inserted, should any **Palaeontological Material** be uncovered a Palaeontologist must be called in to investigate.

### **(n) Visual impact**

#### *Impact*

Nuisance to the community.



*How impact management outcomes will be achieved*

- Stick to principles of sustainable development that avoids emotional environmental outcry.
- The project site must be shielded by a net during the construction phase.
- The project must avoid nuisance to the neighbouring properties and the public.

***(iv) rehabilitation of the environment after construction and where applicable post closure; and***

**(a) Clearing construction site**

*Impact*

Environmental and site pollution.

*How impact management outcomes will be achieved*

- Proper housekeeping.
- Once the construction phase is completed all material on site associated with construction must be removed from the property, and everything referred to, as waste must be disposed of at the municipal landfill site or appropriate landfill site as the case may be.
- No on site burning or burial of waste material must be done on site.

**(b) Signing off**

*Impact*

Environmental pollution and degradation left after construction.

*How impact management outcomes will be achieved*

- EMPr has to be signed off by the contractor on site.

**(c) Landscaping**

*Impact*

Soil erosion.

*How impact management outcomes will be achieved*

- Landscaped area, planted with grass and ground cover.
- Eradication of opportunistic invader species on site.
- All bare areas must be planted with grass cover to minimize soil erosion

**(d) Closure**

*Impact*

There is a possibility of soil contamination, soil erosion, noise and environmental pollution in an unlikely event of decommissioning.

*How impact management outcomes will be achieved – see (P) below.*

- Contaminated soil must be cleaned, removed and disposed of at the nearest disposal site.

***(v) where relevant, operation activities;***

**(a) Spillage***Impact*

Environmental pollution and possible degradation.

*How impact management outcomes will be achieved*

- Standard operating procedure to deal with possible spillage of any type.

**See also (O) below.**

.....where applicable include actions to:

*(ii) comply with any prescribed environmental management standards or practices;*

As highlighted throughout the report.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

In an unlikely event of closure, the activity must be reported to the Department of Environmental Affairs, Department of Economic Development, Tourism and Environmental Affairs and Local Authorities. Such closure needs monitoring by an environmentalist as outlined above. (see P below)

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

Issues of rehabilitation on site will be done by Foundation One (Pty) Ltd.

**(G) THE METHOD OF MONITORING THE IMPLEMENTATION OF THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

***(i) planning and design;***

*Method of monitoring the implementation of impact management*

Compilation of monthly reports.

***(ii) Pre-construction activities;***

**Environmental awareness and partnerships**

*Method of monitoring the implementation of impact management*

Monthly reporting to the project committee.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*Method of monitoring the implementation of impact management*

- Monitoring environmental performance against the Environmental Management Programme (EMPr) posted on the notice board inside the construction office.

***(iii) construction activities;***

**(a) The storage facility**

*Impact*

Environmental pollution likely to result in soil contamination and environmental pollution in case of leakages and spills.

*Method of monitoring the implementation of impact management*

- Monthly reporting and site photographs.

**(b) Solid waste and littering**

*Impact*

The possible pollution of the environment and water due to litter and waste.

*Method of monitoring the implementation of impact management*

- Monthly reporting and proof of disposal receipts from the landfill site.

**(c) Concrete mixing**

*Impact*

Soil contamination.

*Method of monitoring the implementation of impact management*

- Monthly reporting and inspections.

#### **(d) Chemical materials**

##### *Impact*

Environmental pollution including soil and water.

##### *Method of monitoring the implementation of impact management*

- Monthly reporting and Safety Officer reports.

#### **(e) Management of water, sediments and stormwater**

##### *Impact*

Soil erosion and water pollution.

##### *Method of monitoring the implementation of impact management*

- Monthly reporting and photographs.

#### **(f) Air pollution**

##### *Impact*

Air pollution.

##### *Method of monitoring the implementation of impact management*

- Site inspection and monthly reporting.

#### **(g) Noise control**

##### *Impact*

Noise pollution to the village / settlement and passing local people.

##### *Method of monitoring the implementation of impact management*

- Monthly reporting and information from the local leaders and community.

#### **(h) Earthworks and Soil**

##### *Impact*

Soil erosion and sedimentation.

*Method of monitoring the implementation of impact management*

- Site inspection and monthly reporting.

**(i) Vegetation / Groundcover**

*Impact*

Soil erosion.

*Method of monitoring the implementation of impact management*

- Site inspection and photographs.

**(j) Health and safety**

*Impact*

Unhealthy and unsafe environment.

*Method of monitoring the implementation of impact management*

- Monthly reporting, inspection and safety officer reports.

**(k) Construction camp**

*Impact*

The unsuitable location is likely to result in environmental degradation.

*Method of monitoring the implementation of impact management*

- Site inspection.

**(l) Traffic Management**

*Impact*

Congestion caused by delivery trucks.

*Method of monitoring the implementation of impact management*

- Site inspection and monthly reporting

**(m) Heritage impact***Impact*

Impact on heritage resources that may be identified during earthworks.

*Method of monitoring the implementation of impact management*

- Site inspection, monthly reporting done in line with the recommendations of Amafa AkwaZulu-Natali.
- Chance Find Protocol has been inserted in the report, should any **Palaeontological Material** be uncovered a Palaeontologist must be called in to investigate.

**(n) Visual impact***Impact*

Nuisance to the community.

*Method of monitoring the implementation of impact management*

- Site inspection and monthly reporting.

***(iv) rehabilitation of the environment after construction and where applicable post closure; and*****(a) Clearing construction site***Impact*

Environmental and site pollution.

*Method of monitoring the implementation of impact management*

- Site inspection and monthly reporting.

**(b) Signing off***Impact*

Environmental pollution and degradation left behind after construction.

*Method of monitoring the implementation of impact management*

- Site inspection and reporting.

**(c) Landscaping**

*Impact*

Soil erosion.

*Method of monitoring the implementation of impact management*

- Site inspection and photographs.

*Impact*

Possibility of soil contamination.

*Method of monitoring the implementation of impact management*

- Site inspection, photographs and reporting.

***(v) where relevant, operation activities;***

**See also (O) below.**

**Where applicable include actions to:**

*(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;*

- As above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

- Reporting to the Department of Environmental Affairs and Department of Economic Development, Tourism and Environmental Affairs. [ see (P) below].

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

- Landscaping will be done as outlined above.

**(H) THE FREQUENCY OF MONITORING THE IMPLEMENTATION OF THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

The method of monitoring the implementation of the impact management actions contemplated under (F) above. The monitoring for all the impacts will be done on monthly basis through monthly reporting, and project meetings.

**(I) AN INDICATION OF PERSONS WHO WILL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE IMPACT MANAGEMENT ACTIONS;**

**Responsible persons:**

- ◆ Mondli Consulting Services (Environmental Control Officer) – overall responsibility of environmental reporting, training and awareness and the overseer of the implementation of the whole EMPr and Specialists recommendations.
- ◆ Contractor / Site Engineer or Builder – responsible for all engineering or building related work on site, and project implementation.
- ◆ Foundation One (Pty) Ltd – ensure adherence to the EMPr.
- ◆ EDTEA (Compliance Section) – inspections.

**(J) THE TIME PERIODS WITH WHICH THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F) MUST BE IMPLEMENTED;**

***(i) planning and design;***

*Time periods of implementation*

Planning and commencement phase of the project.

***(ii) Pre-construction activities;***

**Environmental awareness and partnerships**

*Time periods of implementation*

Immediately after the completion of all statutory processes, permits and other related legislative requirements.

*Impact*

Ignorance about environmental issues resulting in degradation of the receiving environment.

*Time periods of implementation*

- Immediately after the completion of all statutory processes, permits and other related legislative requirements.

***(iii) construction activities;***

**(a) The storage facility**

*Impact*

Environmental pollution that is likely to result in soil contamination and environmental pollution in case of leakages and spills.

*Time periods of implementation*

- For the duration of construction period.



**(b) Solid waste and littering***Impact*

The possible pollution of the environment.

*Time periods of implementation*

- For the duration of both construction and operational periods.

**(c) Concrete mixing***Impact*

Soil contamination.

*Time periods of implementation*

- During the concrete / construction phase of the project.

**(d) Chemical materials***Impact*

Environmental pollution including soil and water.

*Time periods of implementation*

- For the duration of the project phase.

**(e) Management of water, sediments and stormwater***Impact*

Soil erosion and water pollution.

*Time periods of implementation*

- For the duration of the project and beyond.

**(f) Air pollution***Impact*

Air pollution.

*Time periods of implementation*

- For the duration of the project.

### **(g) Noise control**

#### *Impact*

Noise pollution to the settlement, neighbouring properties and passing local people.

#### *Time periods of implementation*

- For the duration of the project construction phase.

### **(h) Earthworks and Soil**

#### *Impact*

Soil erosion.

#### *Time periods of implementation*

- During the earthworks and construction phases of the project.

### **(i) Vegetation / Groundcover**

#### *Impact*

Soil erosion.

#### *Time periods of implementation*

- On project completion.

### **(j) Health and safety**

#### *Impact*

Unhealthy and unsafe environment.

#### *Time periods of implementation*

- For the duration of the project and beyond.

### **(k) Construction camp**

#### *Impact*

The unsuitable location is likely to result in environmental degradation.

*Time periods of implementation*

- During the site set up.

**(l) Traffic Management**

*Impact*

Congestion and increased traffic flow.

*Time periods of implementation*

- For the duration of the project

**(m) Heritage impact**

*Impact*

Impact on heritage objects that may be identified during earthworks.

*Time periods of implementation*

- For the duration of the project.

**(n) Visual impact**

*Impact*

Nuisance to the community.

*Time periods of implementation*

- For the duration of the project.

***(iv) rehabilitation of the environment after construction and where applicable post closure; and***

**(a) Clearing construction site**

*Impact*

Environmental and site pollution.

*Time periods of implementation*

- During project completion phase.

**(b) Signing off***Impact*

Environmental pollution and degradation left behind after construction.

*Time periods of implementation*

- On project completion.

**(c) Landscaping***Impact*

Soil erosion.

*Time periods of implementation*

- On project completion.

*Impact*

Possibility of soil contamination.

*Time periods of implementation*

- For the duration of the project

**(v) where relevant, operation activities;**

**See (O) below.**

**.....where applicable include actions to:**

*(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;*

- As highlighted throughout the report above.

*(ii) comply with any prescribed environmental management standards or practices;*

- As highlighted throughout the report above.

*(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and*

- Reporting to the Department of Economic Development, Tourism and Environmental Affairs on project completion. [see (P) below].

*(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation; where applicable;*

- Monitoring after project completion.

**(K) THE MECHANISM FOR MONITORING COMPLIANCE WITH THE IMPACT MANAGEMENT ACTIONS CONTEMPLATED IN PARAGRAPH (F);**

**Monitoring and Auditing**

- The Environmental Control Officer (Mondli Consulting Services) will monitor project implementation and do environmental reporting.
- The main contractor / Site Engineer or Builder will ensure adherence to set technical specifications through project meetings.
- The planting of grass and landscaping will be supervised by the environmental control officer.
- The Department of Economic Development, Tourism and Environmental Affairs (Compliance Section) will do inspections as deemed appropriate.

**(L) A PROGRAM FOR REPORTING ON COMPLIANCE, TAKING INTO ACCOUNT THE REQUIREMENTS AS PRESCRIBED BY THE REGULATIONS;**

- Monthly report and auditing.
- Project meetings.

**(M) AN ENVIRONMENT AWARENESS PLAN DESCRIBING THE MANNER IN WHICH –**

*(i) the applicant intends to inform his or her employees of any environmental risk which is likely to result from their work; and*

- This will be done through a short half a day environmental course.
- Employees will be taken through the EMP<sub>r</sub> and key elements of Specialists Studies.

*(ii) risks must be dealt with in order to avoid pollution or degradation of the environment; and*

- There must be full compliance with all relevant pieces of legislation.

**(N) ANY SPECIFIC INFORMATION THAT MAY BE REQUIRED BY THE COMPETENT AUTHORITY**

None.

**(O) OPERATIONAL PHASE**

At the commencement of operational phase, the Environmental Control Officer (ECO) will audit the facility using this Environmental Management Programme (EMP<sub>r</sub>). It is recommended that the Facility be audited six weeks after construction completion, to ensure that the site is in an environmentally acceptable state.

Environmental impact	Responsibility	Occurrence / Time periods of implementation	Method of monitoring
<p><b>Waste management</b></p> <ul style="list-style-type: none"> <li>▪ The storage of waste before disposal to the landfill site must be done in a responsible manner.</li> <li>▪ The facility must provide at least 240 litre bins on site to be emptied and collected by Msunduzi Municipality at least once a week or alternatively a private waste management service provider can be engaged for waste disposal at the landfill site.</li> <li>▪ Since recycling will be encouraged by the project, this must be implemented in an environmentally friendly manner.</li> <li>▪ To ensure that the Waste Management plan is in place.</li> <li>▪ Solid waste generated from this facility should be disposed of in an appropriate</li> </ul>	<p>Fundation One (Pty) Ltd</p>	<ul style="list-style-type: none"> <li>▪ Ongoing</li> <li>▪ For the duration of the project and beyond.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Compliance monitoring,</li> <li>▪ Correct disposal methods.</li> <li>▪ Monitoring of the Waste Management Plan.</li> </ul>

<p>manner at the municipal landfill site.</p> <ul style="list-style-type: none"> <li>▪ Contaminated materials must be disposed of at a permitted hazardous landfill site.</li> <li>▪ Chemical waste must be stored in appropriate containers, and disposed of appropriately at a permitted landfill site which is authorized to accept the said material.</li> </ul>			
<p><b>Stormwater Management &amp; ground water</b></p> <ul style="list-style-type: none"> <li>▪ Continuous implementation of the stormwater plan.</li> <li>▪ After construction, the site must be graded or paved to ensure free flow of runoff and to prevent ponding of water.</li> </ul>	<p>Foundation One (Pty) Ltd</p>	<p>Ongoing</p>	<p>Site inspection and Compliance monitoring.</p>
<p><b>Soil erosion</b></p> <ul style="list-style-type: none"> <li>▪ All bare areas must be planted with ground cover to</li> </ul>	<p>Foundation One (Pty) Ltd</p>	<p>Ongoing</p>	<p>Site inspection.</p>

<p>minimise soil erosion.</p> <ul style="list-style-type: none"> <li>▪ Stormwater plan must be implemented as recommended.</li> </ul>			
<p><b>Health and Safety</b></p> <ul style="list-style-type: none"> <li>▪ Visible warning signs must be erected on site.</li> <li>▪ Training of employees on safety and health issues must be prioritised.</li> <li>▪ Assurance must be made that the staff on site are familiar with fire procedures, and use of fire equipment.</li> <li>▪ Fire extinguishers must be kept at appropriate points during this phase.</li> <li>▪ By ensuring Health and Safety plan is in place.</li> <li>▪ By ensuring proper housekeeping during operational phase.</li> </ul>	<p>Fundation One (Pty) Ltd / Safety Officer</p>	<ul style="list-style-type: none"> <li>▪ Ongoing</li> <li>▪ For the duration of the project and beyond.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Compliance monitoring / Sticking to OHS procedures.</li> <li>▪ Site inspections.</li> </ul>
<p><b>Traffic</b></p> <ul style="list-style-type: none"> <li>▪ Vehicles must be restricted to demarcated areas.</li> <li>▪ Vehicles must adhere to the speed limit of 40 kms per hour.</li> </ul>	<p>Fundation One (Pty) Ltd</p>	<p>Ongoing</p>	<p>Site inspection.</p>



<p><b>Chemicals and spillages</b></p> <ul style="list-style-type: none"> <li>▪ The quantities stored on site must be appropriately handled.</li> <li>▪ Spillage must be prevented at all cost.</li> <li>▪ The accidental spillage must be cleaned up immediately.</li> </ul>	<p>Fundation One (Pty) Ltd / Safety Officer</p>	<ul style="list-style-type: none"> <li>▪ Ongoing</li> <li>▪ For the duration of the project and beyond.</li> </ul>	<p>Compliance monitoring, site inspection, reporting and photographs.</p>
<p><b>Storage facilities</b></p> <ul style="list-style-type: none"> <li>▪ These must be suitably located and kept tidy.</li> <li>▪ Equipment and chemicals must be marked and correctly stored on site.</li> </ul>	<p>Fundation One (Pty) Ltd / Safety Officer</p>	<p>Ongoing</p>	<p>Compliance monitoring / Site inspection.</p>
<p><b>Noise</b></p> <ul style="list-style-type: none"> <li>▪ All equipment must be properly maintained to minimise unnecessary noise.</li> </ul>	<p>Fundation One (Pty) Ltd</p>	<p>Ongoing</p>	<p>Compliance monitoring</p>

## **(P) DECOMMISSIONING PHASE**

Decommissioning is defined as taking out of active service permanently or dismantle partly or wholly, or closure of a facility to the extent that it cannot be readily re-commissioned.

If decommissioning becomes the best option the Department of Economic Development, Tourism and Environmental Affairs has to be informed of this option.

Decommissioning must be done such that it does not pose any danger to potential damage to human life, property and the environment. This must have no adverse impact on the environment. It must therefore be done in the presence of the ECO.

In an unlikely event of decommissioning the following will have to be observed:

- Decommissioning must be done in line with the stipulated procedure; under the supervision of the ECO and full knowledge of the Department of Economic Development, Tourism and Environmental Affairs should the facility be decommissioned.

- A written notice would have to be submitted to EDTEA with a rehabilitation plan.
- Any signs of soil erosion must be addressed during and after the decommissioning phase.
- Contaminated material must be cleaned, removed and disposed of at the nearest landfill site.
- The area must be cordoned off with a danger tape and appropriate signage conspicuously displayed around the site during decommissioning.
- All services equipment must be mapped e.g. electrical pipes, stormwater and water pipes to avoid damage.
- Contaminated soil after laboratory tests must be stockpiled and disposed of at the nearest landfill site capable of handling that particular soil.

### **(Q) CONCLUSION**

According to the National Environmental Management Act, 1998 everyone must take reasonable measures to ensure that they do not pollute the environment. In this regard the reasonable measures will include informing and educating employees about environmental risks of their activities and instil a sense of environmental consciousness.

It is therefore, crucial that all recommendations are adopted and effected to the letter during all phases of this development as part of the mitigation measures. It must also be kept in mind that the Environmental Management Programme is a live document, that need adjustment as the need arise, as long as such changes are in the interest of the environment.