

**DRAFT  
ENVIRONMENTAL MANAGEMENT PROGRAMME  
FOR THE  
PROPOSED UPGRADE OF MAGOBELA GRAVEL ROAD, KWAZULU NATAL**

*(Prepared in Terms of EIA Regulations, 04 December 2014) (as amended)*

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## List of Abbreviations

<b>NEMA</b>	<b>National Environmental Management Act (No. 107 of 1998)</b>
<b>EIA</b>	<b>Environmental Impact Assessment</b>
<b>BAR</b>	<b>Basic Assessment</b>
<b>EMPr</b>	<b>Environmental Management Programme</b>
<b>DEA</b>	<b>Department of Environmental Affairs</b>
<b>EDTEA</b>	<b>Department of Economic Development, Tourism and Environmental Affairs.</b>
<b>DWS</b>	<b>Department of Water and Sanitation</b>
<b>I &amp; AP</b>	<b>Interested and Affected Parties</b>
<b>EAP</b>	<b>Environmental Assessment Practitioner</b>
<b>ECO</b>	<b>Environmental Control Officer</b>
<b>RE</b>	<b>Resident Engineer</b>

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## ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

### 1 INTRODUCTION

Msinga Local Municipality has appointed Isolendalo Environmental Consulting to undertake the Basic Assessment and Public Participation process required in terms of the National Environmental Management Act 107 of 1998 (NEMA) and the EIA Regulations, 2014 for the proposed upgrade of Magobela gravel road in the rural areas of Ngulule and kwaNtuli in Msinga, KwaZulu Natal. The proposed development entails the upgrade of existing informal road tracks into a 7A type gravel road and the installation of 5 culverts along Magobela gravel road.

The proposed development triggers EIA 2014 Regulations (Amended) as such it will require an Environment Authorisation. The proposed development is identified as an activity that will have negative impacts on the environment as such an Environmental Management Programme (EMPr) is imperative. As per the EIA Regulations, 2014 (as amended) and National Environmental Management Act (NEMA) as amended, prescribed a principle of "Duty of Care and Remediation". The Environmental Management Programme (EMPr) is developed with the intention to define environmental measures and procedures to prevent, minimize and mitigate adverse impacts and to ensure compliance with applicable environmental standards during pre-construction, construction, post construction and operation of the proposed development.

#### The specification of the proposed development is as follows:

Proposed Road specifics:

Road type	Length (km)	Width (m)	Area Coverage including culverts (m <sup>2</sup> )
7A Type gravel road	6.3	5	28350

Proposed Crossings specifics;

Crossing	Co-ordinates	Type	Total Area of Culvert (m <sup>2</sup> )	Amount of material to be removed (m <sup>3</sup> )
1	28° 39' 44.11" S	6 x 900 DIA Pipe Culvert	43	29

	30° 21' 04.30" E			
<b>2</b>	28° 39' 53.23" S 30° 20' 46.58" E	2 x 900 DIA Pipe Culvert	15	10
<b>3</b>	28° 39' 12.82" S 30° 19' 41.73" E	10 x (1200 x 1800 Concrete Portal Culvert)	236	755
<b>4</b>	28° 39' 09.86" S 30° 19' 21.11" E	8 x (1200 x 1800 Concrete Portal Culvert)	195	585
	28° 38' 43.53" S 30° 18' 48.58" E	2 x 900 DIA Pipe Culvert	15	10

The proposed project will have some impacts on the natural environment and as such an Environmental Management Programme (EMPr) is imperative. The primary intention of this EMPr is to define environmental measures and procedures to prevent, minimize and mitigate adverse impacts and to ensure compliance with applicable environmental standards during the construction and operation phase of the proposed development.

Isolendalo Environmental Consulting has therefore been appointed as an Independent Environmental Assessment Practitioner (EAP) to assess anticipated impacts and ensure compliance to environmental requirements. Isolendalo Environmental Consulting has therefore compiled this document which serves as an EMPr to provide principles for the management of environmental impacts which are expected to occur during the construction and operation phase of the proposed development.

## **1.1 Outline of the Study Area**

### **1.1.2 Environmental Features of the Study Area**

#### **Climate**

The warm Agulhas current's water is a major influencing factor contributing to the climate of the KwaZulu-Natal, especially for areas in the coastal region, giving it its humid subtropical character. The climate is more formally described as having mild temperatures with summer rain and an indistinct dry season. KZN has a maritime climate which is characterized by warm and sunny summers (January being the hottest month) as well as cold and dry conditions in winter (June being the coldest month). As outlined in the description, the study area falls under uMsinga Local Municipality, which is characterised with a temperate climate, with warm to hot summers and mild to cool winters.

With reference to the South African weather system, Msinga Local Municipality falls within coastal summer rainfall areas. The type of rainfall it receives is termed orographic or relief rainfall which is highly influenced by mountains and topography. Rainfall in ward 2 and ward 3 of the municipal area ranges between 601 mm and 800 mm. The closest town to KwaNtuli and Ngulele is Tugela Ferry and it is characterized by a mild climate which is generally warm and temperate. Summers have a good ideal of rainfall, while the winters have very little rainfall. The average annual temperature is 19.4 °C and the average annual rainfall is 679 mm.

### Vegetation

Ezemvelo KZN Wildlife through its processes systematically mapped critical biodiversity areas in KwaZulu-Natal with increasing accuracy. The data set they used is based on various studies on flora, fauna and water resources, which aims to identify key local biodiversity areas that need to be considered in spatial planning. A huge number of scattered areas within the municipality are classified as Biodiversity area 3, which refers to land which is substantially disturbed and transformed. These areas are also classified as Medium to Low environmentally sensitive areas.

The study area falls within an area that has already been disturbed in terms of vegetation, since there is an existing informal access road and footpaths. The gravel road is located within Grassland and Savanna Biomes and the area is pre-dominated with low laying vegetation cover, mainly grass. The following vegetation species pre-dominate the area: Thukela Thornveld and Northern KwaZulu Natal Moist Grassland. Thukela Thornveld is considered least threatened with approximately 25% statutorily conserved within Weenen Game Reserve and Isandlwana Nature Reserve. However, these two places are quite far from the study area.

### 1.2 Contact Details

Below are the details of the project team including the developer, EAP and Competent Authority.

ORGANISATION/COMPANY	ROLE	CONTACT PERSON	CONTACT DETAILS
Msinga Local Municipality	Developer	Mr SL Sokhela	Private Bag X530 Tugela Ferry 3010 Tel: 033 493 0760 Fax: 033 493 0757

			Email: SL_sokhela@yahoo.com
Isolendalo Environmental Consulting	EAP	Mr. WB Nogobela	19 Valley Road, Margate, KwaZulu Natal 4275. Tel: 039 315 0437/083 408 5737 Fax: 039 315 0407 Email: wnogobela@isolendalo.co.za
Department of Economic Development, Tourism and Environmental Affairs	Competent Authority	Mr Gerald Willis-Smith	Block 2, Talana Building 26 Beaconsfield Street Dundee 3000 Tel: 034 299 7913 Gerald.Willis-Smith@kznedtea.gov.za

## 2 THE ENVIRONMENTAL PROCESS

In accordance with the Integrated Environmental Management Guidelines published by the Department of Environmental Affairs (DEA) in 2014, the purpose of an Environmental Management Programme (EMPr) is “to describe how negative environmental impacts will be managed, rehabilitated, monitored and how positive impacts will be maximized”. It is a detailed plan of action prepared to organise and coordinate environmental mitigation, rehabilitation and monitoring so that positive impacts are enhanced, and negative impacts and damage to the environment are avoided, minimised or rectified where required.

### 2.1 The objectives of the EMPr are to:

1. Provide a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on site.
2. Ensure that the construction and operational phases of the project continues within the principles of Integrated Environmental Management.
3. Detail specific actions deemed necessary to assist in mitigating the environmental impact of the project.
4. Ensure that the safety recommendations are complied with.
5. Provide feedback for the continuous improvement in environmental performance.



6. Serve as a framework for the acceptable implementation of environmental and social initiatives.
7. Be able to stand as a structure which addresses the relevant concerns of the public regarding the development.

This EMPr, which forms an integral part of the contract documents, informs the developer of his duties in the fulfilment of the project objectives, regarding the prevention and mitigation of environmental impacts caused by construction and operational activities associated with the project. This is to include any rehabilitation and landscape work which is needed during post-construction which would be carried out by the Contractor (C) or specialist subcontractor who may be appointed to do such rehabilitation work. The provisions of the EMPr are binding on the Contractor during the contract period and the developer in the operational phase.

All activities and earthworks associated with construction will be undertaken in accordance with SABS 1200 standards, which deal with guidelines for civil engineering and general construction works. Any environmental issues that are identified during or after construction will be addressed in consultation with the Environmental Control Officer (ECO). As such it should be noted that this document is a dynamic document that may require updating or revision where necessary.

### 3 LEGAL FRAMEWORK

Environmental legislation applicable to the formulation of an EMPr includes but is not restricted to the following:

Title of Legislation, policy or guidance	Administering Authority	Date
South African Constitution Act (Act No.107 of 1998)	South Africa	1998
National Environmental Management Act (Act No 107 of 1998 [NEMA]) as amended	Department of Environmental Affairs (DEA)	1998
Environment Conservation Act (Act No.73 of 1989)	DEA	1989

EIA Regulations, 2017	DEA	2017
National Water Act (Act No 36 of 1998)	Department of Water and Sanitation (DWS)	1998
National Waste Management Act (Act No. 64 of 2014)	DEA	2008
National Heritage Resources Act (Act No 25 OF 1999)	South African Heritage Resources Agency (SAHRA)	1999
National Environmental Management Biodiversity Act (Act 10 of 2004)	DEA	2004
National Air quality (Act 39 of 2004)	DEA	2004
Integrated Coastal Management (Act 24 of 2008)	DEA	2008

## 4 PARTIES INVOLVED

### 4.1 Project Manager / Engineer (PM / E)

The Project Manager / Engineer are the administrators of the project acting in line with requirements and scope of work from the developer. The engineer is responsible for all direct communication with the contractor. The project manager in this project will be the Developer, Mr. S Dlomo.

### 4.2 Contractor (C)

The main Contractor(s) appointed by the developer for the upgrade of Magobela gravel road. The contractor will be appointed by the developer. The main Contractor(s) is required to adhere to the EMPr and is responsible to ensure that all sub-contractors, suppliers and staff appointed by them also adhere to the EMPr. The contractor is also responsible for direct communication with the ECO concerning all environmental non-compliances.

### 4.3 Environmental Control Officer (ECO)

An independent Environmental Assessment Practitioner appointed by the Developer to act on behalf of the Developer in matters concerning the day-to-day implementation of the EMPr and for liaison with the Developer, Engineer and Contractor. The ECO must monitor this development on a regular basis during the construction and rehabilitation phases to ensure compliance with the EMPr. Non-compliances identified must be communicated with the Project Manager (PM), Contractor

and Developer with open channels of communication and liaison between these parties. Reports are to be compiled by the ECO which must include photographs taken during inspection and must be submitted to the Project Manager, Developer and EDTEA monthly.

#### **4.4 Local Community**

People residing or present in the region and near the construction activities, including the owners and/or managers of land affected by the construction of the proposed additions, workers on the land, and people in nearby towns and villages. For this particular development it will be the community members of Ngulule and kwaNtuli rural areas.

#### **4.5 Public**

Any individual or group concerned with or affected by the Project and its consequences, including the local community, local, regional, and national authorities, investors, workforce, customers, consumers, environmental interest groups, and the public.

### **5 PROJECT DETAILS**

UMsinga Local Municipality has identified the need to upgrade the existing informal road tracks linking communities from Ngulule and kwaNtuli rural areas within uMsinga Local Municipality under uMzinyathi District Municipality. The informal road tracks will be upgraded to a 7A type gravel road and it will spread across multiple watercourses and therefore uMsinga municipality also proposes to install culverts over five (5) watercourses found along Magobela access road. Isolendalo Environmental Consulting was appointed by DLV Engineers and Project Managers on behalf of uMsinga Local Municipality to undertake a Basic Assessment for the above-mentioned project in terms of the National Environmental Management Act (Act No. 107 of 1998) and in terms of EIA Regulations 2014 (As Amended).

The proposed gravel road is going to be constructed in uMsinga between the rural areas of Ngulule and kwaNtuli and the total length of the proposed gravel road is 6.3km with a width of 5m. Currently, there are no existing culverts installed or bridges within the river streams proposed to be developed. In addition to this, the existing informal road tracks are not in a good state and pose danger to the community members that utilise the road and thus there is a need to upgrade it into a 7A type gravel road.

The main objective of the proposed development is to ensure safety to the community members and other parties using this road as well as ensuring that there is easy commuting for all road users even during heavy rains and bad weather

especially for children travelling to and from school on a daily basis. The upgrade of the existing informal road tracks entails a removal of 28350 m<sup>2</sup> of vegetation and trees (this includes trees below 1m girth) and the displacement of soil along the route of the proposed road. 570 m<sup>2</sup> of soil will be removed/moved for the installation of the proposed pipelines over the 5 watercourses, as such, the proposed development triggers EIA Regulation 2014 (As Amended), and an application had to be done.

## **6 RECORD KEEPING**

A copy of the EMPr must be kept on site at all times and made available for inspection by visiting officials. This EMPr will be of use during the implementation of Magobela gravel road. The ECO must issue the Contractor with a notice of non-compliance whenever transgressions are observed. The Contractor must document the nature and magnitude of any non-compliance in a designated register, the action taken to correct the non-compliance, the actions taken to mitigate its effects and the results of those actions. Any non-compliance shall be documented and reported to the Project Manager in a monthly report. The Contractor must also record all complaints received regarding activities on the construction site pertaining to the environment, and the response noted with the date and the action taken. Complaints register will be available in the environmental file. These records must be submitted to the Project Manager in the monthly report.

## **7 COMPLIANCE AND PENALTIES**

The duration over which the Contractor's controls shall be in place cover the construction period of the project as well as the limited time after the contract completion in the General Conditions of Contract, and the project specifications, as the defects liability period.

The Developer/Contractor is deemed not to have complied with the EMPr if:

1. There is evidence of contravention of clauses with the boundaries of the site, site extensions and access roads;
2. Environmental damage occurs due to negligence;
3. The contractor fails to comply with corrective or other instructions issued by the Project Manager or Engineer or Environmental Control Officer within a specified time frame;
4. The contractor fails to respond adequately to complaints from the public or local community.

Contractor must act immediately after a notice of non-compliance is received and correct the cause for the issuing of the notice. Application of a penalty clause will apply for incidents of non-compliance.

The imposition of such a penalty will not preclude the relevant provincial authority from applying an additional penalty in accordance with statutory powers. Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression, as deemed fit. The polluter-pays principle applies.

*The “polluter-pays” principle provides that “the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment. NEMA imposes a duty of care on every person who causes, has caused or may cause significant pollution or degradation of the environment is authorised by law or cannot reasonably be avoided, NEMA requires that the pollution be minimised and rectified.*

Furthermore, NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of certain environmental statutes. For example, offences under the National Water Act No. 36 of 1998 and the Environmental Conservation Act No. 73 of 1989 may result in penalties being imposed in terms of NEMA. Importantly, NEMA provides for the liability on conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

## **8 AMENDMENTS TO THE EMPr**

Any amendments to the EMPr shall be made in agreement between the ECO and Project Manager. Some of the provisions within the EMPr may be altered during the construction phase as is seen necessary by the ECO.

## **9 SIGNING OF THE EMPr**

The acknowledgement form at the back of the EMPr is to be signed by the Developer and all the Contractors. All the Contractor’s employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr and the contractual conditions relating to the environment, as contained in the contract document. An induction to cover this section must be conducted prior the implementation of this development.

## **10 RECOMMENDATIONS FOR PROPOSED UPGRADE OF MAGOBELA GRAVEL ROAD, KWAZULU NATAL**

It is the view of the Environmental Consultant that the preferred activity will NOT have any major geophysical, biophysical or environmental impacts, provided the recommendations regarding the mitigation and rehabilitation measures presented in this EMPr are adhered to. The Environmental Consultants believe that the proposed development will have strong socio-economic benefits, the activity will enhance job creation in ward 2 and ward 3 in Msinga, Tugela Ferry. Furthermore, the proposed development will help maximizing both the need and desirability of development to the applicant and the surrounding community.

## **11 PROCEDURE**

### **11.1 Pre-construction Phase**

A pre-construction meeting will be conducted with the professional team to understand the contents of the EMPr and address any arising issues prior the commencement of construction activities. The requirements of the EMPr must be incorporated into any tender/contract documents by way of specific clauses that convey the impact and mitigation required. These clauses are to be agreed between the responsible professional members of the team and the environmental consultant.

### **11.2 The Construction Phase: Responsibilities and General Matters**

Miscellaneous environmental matters and the relationships between the Contractors, ECO and the other members of the professional team are outlined in this section.

### **11.3 Activity**

This section highlights the various aspects or impacts related with the project i.e. the Applicant / Contractor's activities that will interact with the environment.

### **11.4 Management/Mitigation Measures**

This section in the table indicates the actions required to either prevent and / minimize the potential impacts on the environment that is associated with the project.



### **11.5 Responsibility**

The section indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr. Formal responsibilities are necessary to ensure that key procedures are executed.

### **11.6 Frequency/Timing**

This section indicates when and/how often the actions for that specific aspect must be implemented and /or monitored. Environmental Audits shall be undertaken at least once a month until the construction is complete.

**12 Pre-Construction, Construction, Operational Phase, Decommissioning phase, Staff Conduct**

**A. PRE-CONSTRUCTION PHASE**

Activity	Management / Mitigation	Responsibility	Frequency / Timing
<b>A1 -Administration</b>	<p>A complaints register must be kept on site. I&amp;APs need to be made aware of the existence of the complaints book and the methods of communication available to them. Details of complaints must be incorporated into the audits as part of the monitoring process. This must be in carbon copy format, with numbered pages.</p> <p>A register must also be kept for environmental issues such as spills and contamination and cleaning undertaken.</p>	<p>C / PM / ECO</p>	<p>On-going</p>
	<p>The EMPr must be kept on site at all times.</p>	<p>All</p>	<p>Ongoing</p>
	<ol style="list-style-type: none"> <li>1. All members of the project team must be provided with adequate environmental training.</li> <li>2. Any and all mitigation measures that must be set up prior construction must be implemented.</li> <li>3. Monitoring and control programmes must be put in place to manage alien invasive plants.</li> </ol>		



	<p>a. The Contractor must ensure that all site personnel have a basic level of environmental awareness training. Environmental awareness posters must be used on site. The Contractor must submit a proposal for this training to the ECO for approval. Topics to be covered must include:</p> <ol style="list-style-type: none"> <li>1. What is meant by “environment”;</li> <li>2. Why the environment needs to be protected and conserved;</li> <li>3. How construction activities can impact the environment;</li> <li>4. What can be done to mitigate against such impacts;</li> <li>5. Awareness of emergency and spills response provisions;</li> <li>6. Social responsibility during construction e.g. being considerate to local residents.</li> </ol> <p>It is the contractor’s responsibility to provide the site foreman with environmental training and to ensure that the foreman has sufficient understanding to pass this information onto the construction staff.</p>	PM, ECO, C	Pre- and during construction
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	<p>2. Staff operating equipment shall be adequately trained and sensitized to any potential hazards associated with their tasks.</p> <p>a. The Engineer / ECO must be on hand to explain more difficult / technical issues and to answer questions which may be raised.</p> <p>b. The use of pictures and real-life examples is encouraged as these tend to be more easily remembered.</p> <p>c. No operator shall be permitted to operate critical items of mechanical equipment without having been trained by the Contractor and certified competent by the Project Management.</p> <p>d. All employees must undergo the necessary safety training.</p>		
<b>A3 - Access to site</b>	<b>A3.1 Routing</b>		
<i>Sound environmental principles must be followed</i>	a. The conditions of all access roads be affected by the project must be established in order to ensure that any damage which has resulted from construction related activities is fixed post-construction.	ECO, C & PM	Prior to moving onto site and during construction
	b. The location of all underground services and servitudes must be identified and confirmed before construction commences (IF ANY).		
<b>A4 – Setting up the construction camp</b>	<b>A4.1 Layout &amp; Location</b>		
<i>Careful planning of the construction camp can ensure that time and costs</i>	a. The construction camp must be located close to the proposed development and it must be located away from flood line and watercourses.	E / C / PM / ECO	Pre-construction
	<b>A4.2 Ablutions</b>		

<i>associated with environmental management and rehabilitation are reduced.</i>	a. Temporary chemical toilets must be provided by a company approved by the Developer.	PM / C / ECO	During set-up	
	b. The construction of a “long-drop” is forbidden.	E / PM / ECO	On-going	
	c. A service plan for the maintenance of the toilets must be provided by the Contractor and is to be approved by the Engineer and ECO to ensure toilets are properly serviced and hygienic.			
	<b>A4.3 Provision for Camp Waste Disposal</b>			
	a. Bins and / or skips must be provided for the disposal of waste within the construction area. The bins must be covered. Bins should have liner bags for efficient and safe disposal of waste.	PM / C / ECO	During site set-up and on-going	
	b. Recycling and the provision of separate waste receptacles for different types of waste must be encouraged. Where possible, plastics, paper, glass and cans must be separated from other domestic waste for recycling. If waste is to be recycled, appropriately labelled waste receptacles must be made available.			
c. Any potentially hazardous containers must be punctured or disabled prior to disposal.				
<b>A5 – Establishing Equipment Lay-Down &amp; Storage Areas</b>	<b>A5.1 – General Substances and Materials</b>			
<i>Storage areas can be hazardous, unsightly and can cause</i>	a. Equipment lay-down and storage areas must be designated and demarcated.	PM / E / C / ECO	During site set-up	
	b. There must at least be one fire extinguisher located within the construction area.			
	<b>A5.2 –Hazardous Substances and Materials</b>			

<p><i>environmental pollution if not designed and managed carefully. Hazardous substances are those that are potentially poisonous, flammable, carcinogenic, or toxic. Some examples are: diesel, petrol, oil, bitumen, cement, solvent based paints, lubricants, explosives, drilling fluids, pesticides, herbicides, LPG.</i></p>	<p>a. Hazardous substances and containers of such substances must be placed on an impermeable surface that is protected from the ingress of storm water from surrounding areas in order to ensure that accidental spillages do not result in pollution and contamination of soil and/or underground water.</p>	<p>PM / E / C / ECO</p>	
	<p>b. Material Safety Data Sheets (MSDSs) must be readily available on site for all chemicals and hazardous substances to be used on site. Where possible and available, MSDSs must additionally include information on ecological impacts and measures to minimize negative environmental impacts during accidental releases or escapes.</p>		<p>Ongoing</p>
	<p>c. Staff dealing with these materials / substances must be aware of their potential impacts and follow the appropriate safety measures. The Contractor must ensure that its staff is made aware of the health risks associated with any hazardous substances used and has been provided with the appropriate protective clothing / equipment in case of spillages or accidents and have received the necessary training.</p>		
	<p>d. All concrete mixing must take place on a designated, impermeable surface.</p>		<p>During construction</p>
	<p>c. The Engineer / ECO must be on hand to explain more difficult / technical issues and to answer questions which may be raised.</p>		

	<b>A5.3 – Worker conduct on site</b>	PM / C	
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	<p>a. A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following rules:</p> <ul style="list-style-type: none"> <li>a. No alcohol / drugs to be present on site, no vehicles or machinery are to be operated whilst under the influence of alcohol or drugs.</li> <li>b. Prevent excessive noise to minimize disturbances to local residents.</li> <li>c. No firearms allowed on site or in vehicles transporting staff to/from site (uncles used by security personnel).</li> <li>d. Bringing pets onto site is forbidden.</li> <li>e. Construction staff are to make use of facilities provided for them, as opposed to ad-hoc alternatives (e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden). No fires to be permitted on site. The use of gas-operated cookers for preparation of food on site must be encouraged.</li> <li>f. Trespassing on private / commercial properties adjoining the site is forbidden.</li> <li>g. No worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do.</li> <li>h. The staff conduct rules are described in a separate table of Rules (Section F of the EMP). This is aimed at providing staff with the basic information regarding worker conduct on site)</li> </ul>		<p>During staff induction, followed by on-going monitoring</p>
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<b>A6 – Social Impacts</b>  <i>It is important to take notice of the needs and wishes of those living or working adjacent to the site. Failure to do so can cause disruption to work and increase cost in the form of delays.</i>	<b>A6.1 Public Participation</b>		
	a. All Interested and Affected Parties (IAPs) must be notified of the starting date of construction.	E / PM/ C	Prior to moving onto the site and on-going
	b. Open liaison channels must be established between the developer, the contractors and Interested and Affected Parties (I&APs) such that any queries, complaints or suggestions can be dealt with quickly and by the appropriate person(s). The IAPs can be identified as those that live close by the site, work close to the site, will have their services / infrastructure affected by the project, have a general interest in the project, and / or the ward Councillor in which the construction is taking place.	E / PM	Prior to moving onto site and on-going
	<b>A6.2 Noise Impacts</b>		
	a. Construction vehicles / machines are to be fitted with standard silencers prior to the beginning of construction. Operating and service standards must be followed as per operating instructions of the vehicles and machines.	E / PM / C	During surveys and Prelim Investigations and site set up.
<b>A7 Soil Erosion</b>  <i>The stripping of vegetation during preliminary activities on site greatly increases the risk of soil erosion.</i>	<b>A.7.1 Conservation of Valuable Soil Resources</b>		
	a. Procedures that are in place to conserve topsoil during the construction phase of the project are to be applied to the set-up phase, i.e. topsoil is to be conserved while providing access to the site and setting up the camp.	E / PM / C / ECO	Throughout the duration of the project
<b>A8 Stormwater</b>	<b>A.8.1 Stormwater Damage Prevention</b>		

<i>Serious financial and environmental impacts can be caused by unmanaged storm water.</i>	a. The Contractor must provide a stormwater management plan which must be approved by the Engineer and ECO.	E / ECO / PM	During surveys and preliminary investigations.
	b. During site establishment, all material to be used during construction must be placed safely and accordingly as deemed necessary by the Engineer.	E	During site establishment
<b>A.9 Water Quality</b>	<b>A.9.1 Maintenance of Water Quality</b>		
<i>Incorrect disposal of substances and materials and polluted run-off can have serious negative effects on groundwater quality.</i>	a. Drip trays must be obtained for use when refuelling or containing of leaks from vehicles.	E / PM / ECO	During site set up.
	b. A designated, bunded area is to be set aside for vehicle washing and maintenance. Materials caught in this bunded area must be disposed of to a suitable waste disposal site or as directed by the Engineer.		
	c. Provision must be made during set up for all polluted run-off to be treated to the Engineer's approval before being discharged into the storm water system. Any waste that cannot be treated to acceptable standards on site must be treated and disposed by a licensed treatment company.		During site set up, to be monitored weekly
<b>A.10 Set up of Waste Management</b>	<b>A.10.1 Waste Management</b>		
	a. The contractor is responsible for the internal collection of refuse and for transporting it to a registered landfill site at least once every week; unless a service agreement is entered into between the Contractor and the Developer.	C	During site set up
	b. The excavation and use of rubbish pits is forbidden.		



	c. Burning of waste is forbidden <sup>1</sup> .	PM / ECO / C	During site set up
<b>A.11 Cultural Environment</b>	<b>A.11.1 Protection of Cultural Environment</b>		
	<p>Prior to the commencement of construction, all the staff needs to know what possible archaeological or historical objective of value may look like, and to notify the Engineer / Contractor should such an item be uncovered.</p> <p>If any artefacts or graves are uncovered during construction, all work on site is to cease and AMAFA as well as the ECO is to be notified for comment. Construction may only commence once approval by AMAFA is granted.</p>	ECO / PM / C	During site set up and on-going.
<b>A.12 Safety and Security</b>	<b>A.12.1 Fencing / Demarcation</b>		
	a. All necessary signage must be obtained prior to the commencement of construction activities.	PM / C / ECO	On-going.
	<b>A.14.3 Risks Associated with Materials on Site</b>		
a. All IAPs must be notified in advance of any known potential risks associated with the construction site and the activities on it including disturbance of access.			

<sup>1</sup> A possible exception to this may be that the alien invasive vegetation, which is removed from the site, must be burned to prevent the spread of the plants.

## B. CONSTRUCTION PHASE

This pertains to all environmental impacts associated with construction and is not limited to the land on which the Project is to be located. It includes the site footprint, construction campsites, access roads and tracks, as well as any other area affected or disturbed by construction activities. The EMPr (particularly the specifications for rehabilitation) is relevant for all areas disturbed during construction. Furthermore, the EMPr takes into account all secondary impacts on the local community and the public. *(It is recommended that any disturbances, which may take place, commence only after the first spring flush so that any indigenous vegetation can be relocated for rehabilitation).*

Activity	Management / Mitigation	Responsibility	Frequency / Timing
<b>B1 – Access to the site</b>	<b>B1.1 Maintenance of the access</b>		
	a. Contractor must ensure that access roads are maintained in good condition by attending to any damage as it occurs.	E / C / ECO	Establish at setup
	b. Construction signs must be placed at the beginning of the project indicating all necessary information such as Project Name, Contractor and Municipality. Approval must be sought from the relevant authority for the installation of the signage.	PM / E / C / ECO	
<b>B.2 Maintenance of Construction Camp</b>	<b>B.2.1 Surfaces</b>		
	a. The Contractor must monitor and manage drainage on the site.	PM / C / ECO	Weekly inspection
	b. Run-off from the site must not discharge into neighbours' properties.		
c. It is preferable that construction takes place during the dry season as much as possible to reduce the erosion potential of the exposed surfaces.			

<b>B.2.2 Ablutions</b>		
a. Chemical toilets must be made available to all staff, and must comply with local authority regulations, be maintained in a clean and hygienic condition. Their use must be strictly enforced.	C/ECO	On-going
b. The construction of a “long-drop” is forbidden and Contractor is to ensure that open areas or the surrounding bush are not being used as a toilet facility.	C / ECO	On-going
c. A registered chemical waste company is to be used to remove waste from chemical toilets on site on a regular basis. Proof of toilet service and safe disposal of effluent must be kept on site for each service.	PM / ECO	On-going
<b>B.2.3 Waste Disposal</b>		
a. The construction area must be cleared of litter, debris (e.g. Cement packets, bitumen residues etc.) and other domestic waste on completion of the day’s work.	PM / C / ECO	On-going
b. Bins and / or skips must be emptied regularly, and waste must be disposed of at a registered landfill site. Waybills for all such disposal are to be kept by the Contractor for review by the Engineer / ECO.	PM / C / ECO	Daily
<b>B.2.4 Housekeeping</b>		
a. The Contractor must ensure that his working areas are kept clean and tidy at all times.	PM / C	On-going

<b>B.3 Staff Conduct</b>	<b>B.3.1 Environmental Education and Awareness</b>		
	a. The Contractor must monitor the performance of the construction workers to ensure that the points relayed during their induction have been properly understood and are being followed. If necessary, the ECO should be called to the site to further explain aspects of environmental or social behaviour that are unclear.	PM / C / ECO	On-going
	<b>B.3.2 Worker Conduct on Site</b>		
	a. The rules that are explained in the worker conduct section must be followed at all times. Non-compliance with these rules could result in the removal of workers by the contractor.	PM / C / ECO	On-going
<b>B4 – Dust / Air Pollution</b> <i>Main causes of air pollution are dust particles from vehicle movements and stockpiles, vehicle emissions and fires</i>	<b>B.4.1. Dust &amp; Air Pollution</b>		
	a. Stockpiles may cause dust and must therefore be managed in accordance with the guidelines in Materials Management.	PM / C / E	On-going
<b>B5 – Soil Erosion</b>	<b>B.5.1 Topsoil Stripping and Stockpiling</b>		
	a. Excavated soil and other material must be deposited in a spoil area as agreed with ECO and Engineer.	PM / C / ECO	As each activity is completed.

	b. Erosion prevention measures must be implemented. The site must be monitored weekly. All exposed earth must be rehabilitated promptly with suitable vegetation to protect the soil.	E / PM / C / ECO	On-going
<b>B.5.2 Exposed Surfaces</b>			
	a. Side tipping of soil and excavated materials is not be permitted.	E / C / PM	As directed by the Engineer
	b. Storm water control and wind screening must be undertaken to prevent soil erosion on site.	E / ECO / PM	As directed by the Engineer
	c. There must be no offsite impacts of storm water.	E / ECO / PM / C	As directed by the Engineer
<b>B6 – Storm Water</b>	<b>B6.1 General Principles</b>		
<i>Construction activities frequently result in diversion of natural water flow resulting in concentration of flow and an increase in the erosive potential of the water</i>	a. Earth, stone and rubble is to be properly disposed of so as not to obstruct natural pathways over the site.	E / PM / ECO / C	On-going
	b. The provisions of the National Water Act 36 of 1998 shall be complied with at all times.	PM / C / E / ECO	On-going
	c. The Contractor is to ensure that impediments to natural water flow is avoided during construction or re-directed.		
	d. There must be a periodic checking of the site's drainage system to ensure that there is free flow of runoff and that no stagnant water occurs on site.		

<b>B7 – Water</b>  <i>Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.</i>	<b>B7.1 Water Quality</b>		
	a. Contractor is to compile a list of emergency contact numbers to refer to in order to deal with fire, spillages and contamination of land and aquatic environments.	PM / E	On-going monitoring
	c. Mixing / decanting of all chemicals and hazardous substances must take place either on a tray or on an impermeable surface.	PM / E / C	On-going monitoring
	d. Contaminated wastewater must be managed by the site manager to ensure existing water resources on the site are not contaminated. All wastewater from general activities in the camp shall be collected and removed from the site for appropriate disposal.	PM / C / ECO	
	d. Dewatering of vessels, tanks, etc is to take place in a controlled manner. No uncontrolled release of water shall be allowed onto the site area. Water wastage must be avoided and where possible water must be recycled.	PM / C / ECO	
	<b>B7.2 Water Supply</b>		
a. Workers must be provided with clean drinking water at all times.	E / PM		
<b>B8 – Conservation of the Natural Environment</b>	<b>B8.1 Fauna and Flora</b>		
	a. The Contractor is to check that vegetation clearing has the prior permission of the E / ECO and that excavation is kept to a minimum.	ECO / PM / E / C	On-going monitoring / as the work progresses

	<p>b. Alien vegetation encroachment onto the site as a result of construction activities must be controlled during construction. Immediate re-vegetation of stripped areas must take place.</p> <p>c. All chemicals and toxicants to be used for the construction must be stored outside the buffer area and in a bunded area</p>	ECO / PM / E	
<b>B8.2 Geology</b>			
	a. The material that is removed must be separated into topsoil and subsoil. The top 150mm would be considered topsoil and must be stockpiled separately.	PM / C / ECO	On-going monitoring
	b. In the event of infilling, replacement of subsoil must precede the topsoil replacement, and all material must be well compacted.		
<b>B9 – Materials Management</b>	<b>B9.1 Stockpile Management</b>		
	a. Stockpiles must not be situated such that they obstruct natural water pathways.	PM / C / ECO	On-going monitoring
	b. Stockpiles must be protected from erosion using appropriate measures for conditions the stockpiles are exposed to which may include construction of berms or low brick walls around their bases.	PM / C / E / ECO	On-going monitoring
	d. Stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding.		
<b>B9.2 Handling of Hazardous Materials</b>			

	a. Cement and other potential environmental pollutants must be mixed on an impermeable surface with special provisions for storm water management.	E / PM / C / ECO	On-going
	b. Contamination of water resources with unset cement or cement powder should be negated as it is detrimental to aquatic biota.		
	c. All empty containers must be removed from the site for appropriate disposal at a licensed facility and must be treated as hazardous waste.		
	d. No vehicles transporting concrete may be washed/emptied on site.		
	e. All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site.		
	f. Hazardous substances / materials are to be transported in sealed containers or bags.		
	g. The Contractor is to outline a method statement for the dealing with accidents / spillages of hazardous materials. This statement must be handed to the Engineer and ECO.		
<b>B9.3 Sourcing construction materials</b>			
	a. Wherever possible, materials that have been produced locally must be used for the construction provided that they meet the desired standards.	E / C / PM	On-going monitoring
<b>B.10 Social Impacts</b>	<b>B.10.1 Disruption of Infrastructure and Services</b>		



<i>Regular communication between the Contractor and the IAPs is important for the duration of the contract.</i>	a. Contractors activities and movement of staff is to be restricted to within the construction area+.	PM / C	On-going
	b. Should the construction staff be approached by members of the public or other stakeholders, they must assist them in locating the Engineer or Contractor or provide a number on which they may contact the Engineer or Contractor.	E / PM / C	Monthly
	d. The Contractor is to inform neighbours in writing of disruptive activities at least 24 hrs beforehand.	PM / C / ECO / E	
	<b>B.10.2 Visual Impacts</b>		
	b. The site must be kept clean to minimize the visual impact of the site.	PM / C / ECO	As required
	<b>B.10.3 Noise</b>		
	a. Machinery and vehicles are to be kept in good working order for the duration of the project to minimize noise nuisance to neighbours.	PM / C / ECO	On-going
b. Notice of particularly noisy activities must be given to residents adjacent to the construction site. Noisy activities must be restricted to the times given in the Project Specification or General Conditions of Contract.	PM / C / ECO	On-going	
c. There must be no loud music allowed on site.			
<b>B.10.4 Communication with Interested and Affected Parties (IAPs)</b>			

	a. The Engineer and Contractor are responsible for on-going communication with those people that are interested / affected by the project.	PM / C / E / ECO	On-going
	b. Queries and complaints are to be handled by: - documenting details of such communications; - submitting these for inclusion in the complaints register; - bringing issues to the Engineers attention immediately; - taking remedial action as per Engineer's instruction.		
	c. Selected staff are to be made available for formal consultation with IAPs in order to: explain the construction process; answer questions.		

## C. POST-CONSTRUCTION

Activity	Management / Mitigation	Responsibility	Frequency / Timing
<b>C.1 Construction Camp</b>	<b>C.1.1 Construction Camp Rehabilitation</b>		
	Components of the construction camp must be decommissioned and removed from the site.	E / PM / C / ECO	Completion of construction
<b>C2 – Vegetation</b>	<b>C.2.1 Landscaping</b>		

	<ul style="list-style-type: none"> <li>a. All disturbed area or areas are to be rehabilitated and re-vegetated with indigenous grass to anchor soil and reduce erosion.</li> <li>b. The footprint area must be kept a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas;</li> <li>c. Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil</li> </ul>		
<b>C3 – Land Rehabilitation</b>	<b>C.3.1 Land Rehabilitation</b>		
	a. Excavated soil not used in the development must be disposed of in a designated area as agreed with Engineer. Surfaces are to be checked for waste products from activities such as concreting and cleared in a manner approved by the engineer.	E / PM / C / ECO	Project Completion
	b. Rehabilitation must be executed in such a manner that surface runoff will not cause erosion on or off-site. Rehabilitation will include re-vegetation in areas which were once cleared for construction activities.	E / PM / C / ECO	Project Completion
	c. All rubble is to be removed from the site to an appropriate disposal site as approved by the Engineer. Burying of rubble on site is prohibited.	E / PM / C / ECO	
	d. The site is to be cleared of all litter.		

	<p>e. Soil contaminated by hazardous substances must be excavated and removed and disposed of as hazardous waste.</p> <p>f. All removed soil and material must not be stockpiled within the system. Stockpiling should take place outside of the watercourse. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds</p>		
<b>C4 – Materials and Infrastructure</b>	<b>C.4.1 Removal of Barriers, Remediation of Damage</b>		
	a. All material used for building and maintenance must be removed from site after construction.	PM / C / ECO	As completed
	b. The Contractor must repair any damage that the construction works have caused to adjacent areas.	PM / C / ECO	Continually as necessary
	c. All areas where temporary services were installed are to be rehabilitated to the satisfaction of the Engineer and ECO.	PM / E / ECO / C	On completion
<b>C5 – General</b>	<b>C.5.1 General Remediation</b>		
	c. A Meeting is to be held on site between the Engineer, ECO, and the Contractor to approve all remediation activities and to ensure that the site has been restored to a condition approved by the Engineer and ECO.		

**D. OPERATIONAL PHASE**

Activity	Management / Mitigation	Responsibility	Frequency / Timing
<b>D1 – Vegetation / Landscape Management</b>	a. All rehabilitated areas will need to be maintained and re-seeded with local indigenous vegetation where necessary on a regular basis.	The Local Municipality	On-going
<b>D2 – Noise Control</b>	a. Noise will be emitted by vehicles during the construction and operational phases however this will be within the acceptable limits.		
<b>D3 - Storm Water Management</b>	a. The storm water management system implemented as part of the road must be monitored and maintained to ensure continued efficient functionality.		
<b>D4- Solid Waste / Refuse Removal</b>	a. Any waste which is produced from maintenance activities must be appropriately disposed of without any harm to the environment.		
<b>D5 - Soil Erosion</b>	a. The following measures need to form part of the management of the site: 7. Monitoring storm water exit points. 8. Fill in and re-vegetate eroded areas.		
	b. Community and users of the road must be encouraged to use the upgraded road and not create alternative roads and paths.		
<b>D6 – Management of the Development</b>	a. Regularly maintenance is vital.		

## E. DECOMMISSIONING PHASE

The objective of providing guidelines during the decommissioning phase is to prevent structures from being left to deteriorate and look unsightly. It is imperative that non-functional structures be removed as soon as possible, and that the site is rehabilitated as soon as possible. If non-functional structures are not needed anymore, and not removed, it must be maintained that they will be used to prevent the environmental degradation of the site.

Activity	Management / Mitigation	Responsibility	Frequency / Timing
E1 – Dust / Air Pollution	E.1.1. Dust & Air Pollution		

<i>Main causes of air pollution are dust particles from vehicle movements and stockpiles, vehicle emissions and fires</i>	a. Stockpiles from decommissioning of the existing structure may cause dust and must therefore be managed in accordance with the guidelines in Materials Management.	PM / C / E	On-going
<b>E 2 – Soil Erosion</b>	<b>E.2.1 Topsoil Stripping and Stockpiling</b>		
	a. Excavated soil and rubble material must be deposited in a spoil area as agreed with ECO and Engineer.	PM / C / ECO	As each activity is completed.
	b. Erosion prevention measures must be implemented. The site must be monitored weekly. All exposed earth must be rehabilitated promptly with suitable vegetation to protect the soil.	E / PM / C / ECO	On-going
	<b>E.2.2 Exposed Surfaces</b>		
	a. Side tipping of soil and excavated materials must not be permitted.	E / C / PM	As directed by the Engineer
	b. Storm water control and wind screening must be undertaken to prevent soil erosion on site.	E / ECO / PM	As directed by the Engineer
c. There must be no offsite impacts of storm water.	E / ECO / PM / C	As directed by the Engineer	
<b>E3 – Storm Water</b> <i>Construction activities frequently result in diversion of natural water flow resulting in</i>	<b>E3.1 General Principles</b>		
	a. Earth, stone and rubble is to be properly disposed of so as not to obstruct natural pathways over the site.	E / PM / ECO / C	On-going

<p><i>concentration of flow and an increase in the erosive potential of the water</i></p>	<p>b. The provisions of the National Water Act 36 of 1998 shall be complied with at all times.</p>	<p>PM / C / E / ECO</p>	<p>On-going</p>
	<p>c. The Contractor is to ensure that impediments to natural water flow is avoided during construction or re-directed.</p>		
	<p>e. There must be a periodic checking of the site's drainage system to ensure that there is free flow of runoff and that no stagnant water occurs on site.</p>		
<p><b>E4 – Water</b></p>	<p><b>E4.1 Water Quality</b></p>		
<p><i>Water quality is affected by the incorrect handling of substances and materials. Soil erosion and sediment is also detrimental to water quality. Mismanagement of polluted run-off from vehicle and plant washing and wind dispersal of dry materials into rivers and watercourses are detrimental to water quality.</i></p>	<p>a. Contractor is to compile a list of emergency contact numbers to refer to in order to deal with fire, spillages and contamination of land and aquatic environments.</p>	<p>PM / E</p>	<p>On-going monitoring</p>
	<p>b. Every effort must be made to ensure that any chemicals or hazardous substances do not contaminate the soil or ground water on site.</p>	<p>PM / E / ECO</p>	<p>On-going monitoring / as the work progresses</p>
	<p>c. Mixing / decanting of all chemicals and hazardous substances must take place either on a tray or on an impermeable surface.</p>	<p>PM / E / C</p>	
	<p>d. Contaminated wastewater must be managed by the site manager to ensure existing water resources on the site are not contaminated. All wastewater from general activities in the camp shall be collected and removed from the site for appropriate disposal.</p>	<p>PM / C / ECO</p>	



	g. Dewatering of vessels, tanks, etc is to take place in a controlled manner. No uncontrolled release of water shall be allowed onto the site area. Water wastage must be avoided and where possible water must be recycled.	PM / C / ECO	
	<b>E4.2 Water Supply</b>		
	f. Workers must be provided with clean drinking water at all times.	E / PM	
<b>E5 – Conservation of the Natural Environment</b>	<b>E5.1 Fauna and Flora</b>		
	a. The Contractor is to check that vegetation clearing has the prior permission of the E / ECO and that excavation is kept to a minimum in preparation of the decommissioning the existing structure.	ECO / PM / E / C	On-going monitoring / as the work progresses
	b. Alien vegetation encroachment onto the site as a result of construction activities must be controlled during construction. Immediate re-vegetation of stripped areas must take place.	ECO / PM / E	
	<b>E5.2 Geology</b>		
	a. In the event of excavation, the material that is removed must be separated into topsoil and subsoil. The top 150mm would be considered topsoil and must be stockpiled separately.	PM / C / ECO	On-going monitoring
b. In the event of infilling, replacement of subsoil must precede the topsoil replacement, and all material must be well compacted.			
<b>E6 – Materials Management</b>	<b>E6.1 Stockpile Management</b>		

	a. Stockpiles must not be situated such that they obstruct natural water pathways.	PM / C / ECO	On-going monitoring
	b. Stockpiles must be protected from erosion using appropriate measures for conditions the stockpiles are exposed to which may include construction of berms or low brick walls around their bases.	PM / C / E / ECO	On-going monitoring
	g. Stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding.		
<b>E6.2 Handling of Hazardous Materials</b>			
	a. No vehicles transporting rubble may be washed/emptied on site.		
	b. All substances required for vehicle maintenance and repair must be stored in sealed containers until they can be disposed of / removed from the site.		
	c. Hazardous substances / materials are to be transported in sealed containers or bags.		
	f. The Contractor is to outline a method statement for the dealing with accidents / spillages of hazardous materials. This statement must be handed to the Engineer and ECO.		
<b>E6.3 Sourcing construction materials</b>			
	a. Wherever possible, materials that have been produced locally must be used for the construction provided that they meet the desired standards.	E / C / PM	On-going monitoring

<b>E.7 Social Impacts</b>	<b>E.7.1 Disruption of Infrastructure and Services</b>		
<i>Regular communication between the Contractor and the IAPs is important for the duration of the contract.</i>	a. Contractors activities and movement of staff is to be restricted to within the construction area.	PM / C	On-going
	b. Should the construction staff be approached by members of the public or other stakeholders, they must assist them in locating the Engineer or Contractor, or provide a number on which they may contact the Engineer or Contractor.	E / PM / C	Monthly
	c. The conduct of the construction staff when dealing with the public or stakeholders shall be in a manner that is polite and courteous at all times. Failure to adhere to this requirement may result in the removal of staff from the site by the Engineer.	E / PM / C	
	d. The Contractor is to inform neighbours in writing of disruptive activities such as noise at least 24 hrs beforehand.	PM / C / ECO / E	
	e. Drivers of construction vehicles must exercise caution when travelling to and from the site specifically when travelling through residential areas. Drivers of construction vehicles must be considerate of other road users. They are to be especially careful at sections that pose a higher risk of accidents.	PM / C	

<b>E.7.2 Visual Impacts</b>		
b. The site must be kept clean to minimize the visual impact of the site.	PM / C / ECO	As required
<b>E.7.3 Noise</b>		
a. Machinery and vehicles are to be kept in good working order for the duration of the project to minimize noise nuisance.	PM / C / ECO	On-going
b. Notice of particularly noisy activities must be given to residents adjacent to the construction site. Noisy activities must be restricted to the times given in the Project Specification or General Conditions of Contract.	PM / C / ECO	On-going
c. There must be no loud music allowed on site.	PM / C / ECO	On-going
<b>E.7.4 Communication with Interested and Affected Parties (IAPs)</b>		
a. The Engineer and Contractor are responsible for on-going communication with those people that are interested / affected by the project.	PM / C / E / ECO	On-going
b. Queries and complaints are to be handled by: - documenting details of such communications; - submitting these for inclusion in the complaints register; - bringing issues to the Engineers attention immediately; - taking remedial action as per Engineer's instruction.		
c. Selected staff are to be made available for formal consultation with IAPs in order to: explain the construction process; answer questions.		

**F. STAFF CONDUCT CONTROL AND INFORMATION SHEET**

	<u>ALL STAFF MUST OBEY THE FOLLOWING RULES:</u>
1	<b>DO NOT</b> leave the construction site untidy and strewn with rubbish that will attract animal pests.
2	<b>DO NOT</b> bring your pets to the construction site.
3	<b>DO NOT</b> trespass on private properties not linked to the project.
4	<b>DO NOT</b> carry a weapon on the construction site or in the vehicles transporting workers to and from the construction site.
5	<b>DO NOT</b> set fires unnecessarily.
6	<b>DO NOT</b> cause any unnecessary disturbing noise at the construction camp/site or at any designated worker collection/drop off points.
7	<b>DO NOT</b> drive a construction-related vehicle under the influence of alcohol.
8	<b>DO NOT</b> exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable) whilst driving a construction vehicle.
9	<b>DO NOT</b> drive a vehicle that is generating excessive noise (noisy vehicles must be reported and repaired as soon as possible).

10	<b>DO NOT</b> litter along the roadsides, including both public and private roads.
11	<b>DO NOT</b> remove or destroy vegetation at the construction camp/construction site without the prior consent of the Project Manager and Environmental Control Officer.
12	<b>DO NOT</b> tamper with, destroy or remove vegetation from any areas that have been fenced off or marked.
13	<b>DO NOT</b> pollute watercourses, whether flowing or not.



**13 ACKNOWLEDGEMENT FORM**

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in the civil and other construction contract documents.

**PROJECT NAME:**

Proposed Upgrade of Magobela Gravel Road, KwaZulu Natal

**DEVELOPER / PROPONENT:**

Signed: ..... Date: .....

**PROJECT MANAGER:**

Signed: ..... Date: .....

**CONTRACTOR:**

Signed: ..... Date: .....

**ENVIRONMENTAL CONTROL OFFICER**

Signed: ..... Date: .....