

---

# **FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME**

---

## **PROPOSED HOUSING DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE (AGRI- VILLAGE) ON PORTION 5 OF THE FARM MELKSTROOM 563, GORDONIA DISTRICT**

**Applicant:** //Khara Hais Municipality  
**DENC Ref No:** NC/BA/SIY///KHA/UP12/2011  
**Date:** August 2013



Town & Regional Planners,  
Environmental & Development  
Consultants

Physical Address: 9 Barnes Street,  
Westdene, Bloemfontein, 9301  
Postal Address: PO Box 20298,  
Willows, 9320  
Tel: 051 4471583, Fax: 051 4489839  
E-mail: [admin@mdagroup.co.za](mailto:admin@mdagroup.co.za)

---

**TABLE OF CONTENTS**

---

<b>1.</b>	<b>INTRODUCTION</b>	<b>2</b>
1.1	PROPOSED PROJECT AND ASSOCIATED CONSTRUCTION ACTIVITIES	2
1.2	OBJECTIVES OF EMPR	2
1.3	IMPLEMENTATION OF EMPR	3
<b>2.</b>	<b>PREPARATION OF EMPR</b>	<b>3</b>
2.1	PERSONS WHO PREPARED THE EMPR	3
2.2	EXPERTISE OF PERSONS WHO PREPARED THE EMPR	3
<b>3.</b>	<b>RECOMMENDED MANAGEMENT AND MITIGATION MEASURES</b>	<b>5</b>
3.1	PLANNING PHASE / SITE PREPARATION	5
3.2	HANDLING AND STORAGE OF MATERIALS	7
3.3	WASTE MANAGEMENT	8
3.4	SOIL, EROSION AND VEGETATION MANAGEMENT	10
3.5	NOISE CONTROL	11
3.6	SAFETY AND SECURITY	11
3.7	SITE CLEAN UP AND REHABILITATION	11
<b>4.</b>	<b>OPERATIONAL PHASE</b>	<b>11</b>
<b>5.</b>	<b>DECOMMISSIONING / SITE CLOSURE</b>	<b>12</b>
<b>6.</b>	<b>COMPLIANCE AND MONITORING</b>	<b>13</b>

## 1. INTRODUCTION

### 1.1 Proposed project and associated construction activities

//Khara Hais Municipality proposes to develop an agri-village on Portion 5 of the Farm Melkstroom 563, Gordonia District, which will consist of 167 residential erven, a business and two institutional erven, an erf to accommodate the existing graves on the property, as well as associated infrastructure and street. Refer to the proposed site development plan in Appendix C of the Basic Assessment Report.

The site, as referred to in this Environmental Management Programme (EMPr), pertains to Portion 5 of the Farm Melkstroom 563, Gordonia District. The footprint of the proposed development is approximately 12 ha, while the total area of the property is 33 ha. Refer to the location of the sites as indicated in Appendix A of the Basic Assessment Report.

### 1.2 Objectives of the EMPr

The EMPr aims to fulfill the requirements as specified in Section 33 of Regulations No. R. 543 (18 June 2010) in terms of the National Environmental Management Act (Act 107 of 1998), with the following objectives:

- To identify, predict and evaluate actual and potential impacts on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impacts, maximizing benefits and promoting compliance with the principles of environmental management;
- To identify and employ the modes of environmental management best suited to ensuring that the activity is pursued in accordance with best environmental management practices;

- To be able to respond to unforeseen events;
- To provide feedback on compliance.

### **1.3 Implementation of the EMPr**

The project applicant, namely the //Khara Hais Municipality is responsible for the implementation of the EMPr. All contractors should be supplied with a copy of the EMPr and should ensure that construction staff adhere to the mitigation measures.

## **2. PREPARATION OF THE EMPr**

### **2.1 Person(s) who prepared the EMPr**

- i) Prof. P.J. du Preez
- ii) Mr. Neil Devenish
- iii) Me. Marguerite Cronje

MDA  
P.O. Box 20298  
Willows  
9320  
Tel: 051 4471583  
Fax: 051 4489839

### **2.2 Expertise of the person(s) who prepared the EMPr**

- i) Prof. P.J. du Preez

Key qualifications:

- Key competencies and experience include research in vegetation ecology & data management, biomonitoring, impact assessment, environmental management and environmental education.

**Education:**

- B. Sc. (Zoology and Botany), University of the Free State, South Africa, 1981
- B. Sc. Honnours (Plant ecology & Taxonomy), University of the Free State, South Africa, 1982
- Higher Education Diploma, University of the Free State, South Africa, 1983
- M.Sc. (Plant ecology), University of the Free State, South Africa, 1986
- Ph.D. (Plant ecology), University of the Free State, South Africa, 1991

## ii) Mr. Neil Devenish

**Key qualifications:**

- Key competencies and experience include development control applications (applications and appeals pertaining to rezoning, consolidations, subdivisions etc.) township establishment applications, environmental management and control applications.

**Education:**

- B. A. (Sociology, Geography) University of the Free State, SA, 1994
- Master of Town and Regional Planning, University of the Free State, SA, 1996
- Managing the Environmental Impact Assessment Process, Environmental Management Unit, PU for CHE, 2000
- Environmental Management Consulting, South African Institute of Ecologists & Environmental Scientists, 2001
- Water Law of South Africa, The South African Institution of Civil Engineers (SAICE), 2006

iii) Me. Marguerite Cronje

Key qualifications:

- Key competencies and experience include environmental management and research in zoology.

Education:

- B.Sc. (Zoology), University of the Free State, South Africa, 2002
- B.Sc. Honnours (Zoology), University of the Free State, South Africa, 2003
- M.Sc. Diploma (Equine Science), University of Edinburgh, Scotland, UK, 2005
- Masters in Environmental Management, University of the Free State, South Africa, 2008

### **3. RECOMMENDED MANAGEMENT AND MITIGATION MEASURES**

#### **3.1 Planning phase / Site preparation**

- i) Seven (7) days written notice must be given to the Department that the activity will commence. Commencement for the purpose of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.
- ii) Sensitive areas on site not included in the proposed development should be demarcated prior to construction to ensure that unnecessary destruction of natural vegetation, due to construction activities, is prevented.
- iii) Should protected trees be destructed, relocated and / or disturbed, permit must be obtained from Department of Agriculture, Fisheries and Forestry (DAFF) and Department of Environment and Nature Conservation (DENC).

- iv) All protected trees with heights of 1 meter or less must be relocated to a suitable alternative site. All protected tree species with heights of 6 meters or more, must be conserved.
- v) Any complaint from the public during the construction and operation of this project must be attended to by the holder of this authorization as soon as possible to the satisfaction of parties concerned.
- vi) The authorized activities, including site preparation shall not commence before the statutory 30 days of an appeal period has expired.
- vii) The safety of the participants must be ensured by having regular safety inspections and ensuring participants are equipped with necessary safety equipments.
- viii) As stipulated by SAHRA, the graves should be restored where these are dilapidated, protected and conserved. For this purpose, a proper fence must be built around them, including entry gates to allow visits from relatives and family friends. The fence must be placed 5 meters away from the perimeter of the graves. No development is allowed within 15 meters from the fence line surrounding the graves.
- ix) It should be ensured that vegetation within sensitive areas, and especially protected plant species, are not damaged during construction.
- x) Drainage of water on the site, as well as the water outlet drain to bordering areas, should be properly designed according to the nature of the site so that the existing flow pattern is not disturbed but copied.
- xi) Construction workers should not be housed on site.
- xii) Proper sanitation, water and waste facilities should be in place for construction workers.

- xiii) Washing and chemical toilet facilities must be provided on site during the construction phase. Chemical toilets should be cleaned regularly. Untreated sewage must not be discharged directly into the natural environment.
- xiv) Adequate preventative measures must be undertaken to avoid groundwater contamination when installing septic tanks; they must be put in banded concrete walls.
- xv) Clean water should be made available daily to workers on site.
- xvi) The uncovering of previously undetected archaeological or cultural remains must be reported immediately to the South African Heritage Resource Agency (SAHRA). Failure to do so constitute an offence in terms of the National Heritage Resources Act, Act 25 of 1999 as amended.
- xvii) The development must comply with the Municipal by-law.
- xviii) It is the holder of this authorisation's responsibility to ensure that an ongoing management and monitoring of the impacts of the activity on the Environment throughout the life cycle of the activity is put into practice.
- xix) All the areas (e.g. stockpiling of material, machines, workshops, etc.) in the construction site must be clearly defined.

### **3.2 Handling and storage of materials**

- i) All chemicals used during the development, including fuel for the construction vehicles, should be stored in a proper storeroom or protected area to prevent pollution.
- ii) Vehicles should be serviced at designated areas. No oil, diesel or other chemicals may be spilled or discharged anywhere.



- iii) Where applicable, the contractors must ensure that all relevant national, regional and local legislation regarding storage, transport, use and disposal of petroleum, chemical, harmful or hazardous substances and materials are adhered to, where necessary.
- iv) The contractors must use Ready-Mix concrete. Alternatively, cement and concrete mixing should be mixed on mixing trays only and not on exposed soil and only in areas specially demarcated for this purpose. No concrete may be mixed directly on the ground.
- v) Spillage of petroleum products (fuel and lubricants) must be avoided. In terms of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a recognized facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on the site.
- vi) Drip trays must always be available to collect any fluid that may result from accidental spillage, overflow and / or servicing. All equipment that leak must be repaired immediately and / or removed from site when necessary.
- vii) All environmental problems occurring on the site such as chemical spillage, wasteful water disposal, etc. should be reported to the Applicant or Environmental Control Officer (ECO).
- viii) It is the contractor's responsibility that all staff / employees are familiar with all the emergency procedures. The contractor must also ensure that emergency numbers are visible and available and always updated.

### **3.3 Waste management**

- i) General waste must be collected in containers disposed of regularly at a permitted landfill site. Recyclable waste must be recovered for recycling purpose. NB: No temporary dumping of waste is allowed on site.

Precautionary measures should be taken to prevent refuse from spreading from or on the site.

- ii) General waste must be collected in drum containers disposed of weekly at a permitted Municipal landfill site. Recyclable waste must be recovered for recycling purpose. NB: No temporary dumping of waste is allowed on site. Precautionary measure should be taken to prevent refuse from spreading from or on the site.
- iii) Construction waste refers to all construction debris and domestic waste produced during the construction phase.
- iv) The contractor will be responsible for the removal of construction waste.
- v) Suitable containers should be placed on site to collect all solid waste. These should be emptied regularly.
- vi) No littering is permitted. During the construction period the site shall be maintained in a neat and tidy condition.
- vii) The central waste collection point must be specific – where it will be situated to ensure that no soil or underground water contamination takes place this should be done at least on weekly basis.
- viii) All solid waste produced should be disposed of at a licensed landfill site in Upington. During the operational phase, the Municipality will collect solid waste weekly.
- ix) No dumping, burning or burying of waste may take place on site.
- x) Old cement bags, mixing bags, platforms etc. should be discarded in a wind and spill proof container. No cement bags closed or open should be left lying around the site. All visible remains of concrete should be physically removed as soon as possible and disposed of at a suitable site.

### 3.4 Soil, erosion and vegetation management

- i) Camel Thorn (*Acacia erioloba*) trees should not be harmed or removed.
- ii) Erosion management is important. Rehabilitation of disturbed areas is important to help the recovery of the vegetation.
- iii) Removed topsoil is to be stockpiled in an area where it will not be disturbed by vehicles. Topsoil removed during excavations must be kept separate from other material. One layer of bricks or stones is to be placed around the stockpiled topsoil to protect topsoil from washing away during rainstorms. Topsoil must be placed above other material during backfilling. Topsoil is to be placed on the banks or any other areas, which may require topsoil. Re-spreading is to be done to a maximum of 100 mm. All topsoil accumulated in the side drains shall be removed.
- iv) Drainage channels must be designed and installed so that no soil erosion can occur at the outlets.
- v) Open fire is strictly prohibited on site. Provision should be made that no accidental fires are started.
- vi) No firewood shall be collected on site or in surrounding areas.
- vii) The planting of trees to act as a barrier / screen between the development and the adjacent auction kraals is recommended. The following tree species can be used: *Acacia karroo*, *Searsia lancea* and *Searsia pendulina*.
- viii) Habitat Fragmentation and Alien plant infestation should be prevented at all cost.

### **3.5 Noise control**

- i) Construction activities should be limited to normal working hours.

### **3.6 Safety and security**

- i) The contractors must comply with the Occupational Health and Safety Act, National Building Regulations and any other national, regional or local regulations with regard to safety on site. Construction contracts must include safety and security measures for staff.
- ii) Fire extinguishers must be available on site and in the construction camp.

### **3.7 Site clean up and rehabilitation**

- i) Temporary structures and office sites shall be dismantled and removed after completion of the construction phase of the project.
- ii) Grass, tree and shrub species occurring in the region can be used to rehabilitate disturbed areas.
- iii) All waste, equipment, materials, etc. used during construction must be cleared from the site. The contractors must ensure that the site is cleared and rehabilitated to the satisfaction of the Environmental Control Officer (ECO).

## **4. OPERATIONAL PHASE**

- i) All forms of pollution must be prevented, or where it cannot, should be minimized or remedied.
- ii) An alien plant control and monitoring programme is recommended.

- iii) Open stormwater channels on the property should be maintained in a well vegetated condition.
- iv) Solid waste should be collected by the Municipality on a regular basis. Where possible, recyclable materials (glass and paper) should be separated from the general solid waste and taken to a recycling depot.
- v) Soil erosion occurrences should be attended to immediately.
- vi) No development is allowed within 15 meters from the fence line surrounding the graves.
- vii) The "Church" structure warrants protection in terms of the National Heritage Resources Act (Act 25 of 1999).
- viii) Erosion management is essential and areas affected by erosion should be attended to immediately.
- ix) The contractor must take all the necessary precautionary measures to ensure that no fires are caused as a result of construction activities.
- x) All vehicles, equipment and other assets belonging to the contractor must be removed from the property upon completion of the construction works.
- xi) Precautionary principles must be followed as people's lives depend on the project.
- xii) The location of the proposed housing development for residential and mixed retail situated on Portion 5 of the farm Melkstroom 563, Portion Gordonia must remain at the co-ordinates 28°25'16"S 21°19'49"E.

## **5. DECOMMISSIONING /CLOSURE**

- i) Should the proposed development no longer be required, or if decommissioning is required for whatsoever reason then the applicant must

ensure that the structures are removed from site and the area rehabilitated to its original or better condition.

- ii) All construction and storage sites and all areas disturbed by the project must be rehabilitated to their former or better condition. Those sites and areas must be re-vegetated with indigenous plants upon completion.
- iii) And should the project be abandoned or decommissioned, a Closure Management Plan must be compiled and the holder of the Environmental Authorization must rehabilitate the site to the satisfaction of this Department.

## **6. COMPLIANCE AND MONITORING**

- i) The applicant will be responsible for EMPr compliance. The applicant should ensure that the contractors adhere to the recommendations of the EMPr and conditions of the Environmental Authorisation during construction.
- ii) An Environmental Control Officer (ECO) can be appointed separately or can be part of the contractor's team to monitor the construction phase.
- iii) Regular monitoring and / or spot inspections at least every fortnight during the construction phase is recommended.
- iv) Inspections should be documented and any shortcomings addressed immediately.