
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
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TABLE OF CONTENTS

1.	INTRODUCTION	2
1.1	PROPOSED PROJECT AND ASSOCIATED CONSTRUCTION ACTIVITIES	2
1.2	OBJECTIVES OF EMPR	2
1.3	IMPLEMENTATION OF EMPR	3
2.	PREPARATION OF EMPR	3
2.1	PERSONS WHO PREPARED THE EMPR	3
2.1	EXPERTISE OF PERSONS WHO PREPARED THE EMPR	3
3.	RECOMMENDED MANAGEMENT AND MITIGATION MEASURES	5
3.1	PLANNING PHASE / SITE PREPARATION	5
3.2	HANDLING AND STORAGE OF MATERIALS	6
3.3	WASTE MANAGEMENT	7
3.4	SOIL, EROSION AND VEGETATION MANAGEMENT	7
3.5	NOISE CONTROL	8
3.6	SAFETY AND SECURITY	8
3.7	SITE CLEAN UP AND REHABILITATION	8
4.	OPERATIONAL PHASE	9
5.	DECOMMISSIONING / SITE CLOSURE	9
6.	COMPLIANCE AND MONITORING	10

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

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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) 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.
- ii) The area where graves are located on the site should also be demarcated to ensure damage to the graves is avoided.
- iii) It should be ensured that vegetation within sensitive areas, and especially protected plant species, are not damaged during construction.
- iv) 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.

- v) Construction workers should not be housed on site.
- vi) Proper sanitation, water and waste facilities should be in place for construction workers.
- vii) Washing and chemical toilet facilities must be provided on site during the construction phase. Chemical toilets should be cleaned regularly.
- viii) Clean water should be made available daily to workers on site.
- ix) If an artifact or grave is uncovered during construction activities, work in the immediate vicinity is to be stopped until the project Archaeologist has been consulted.

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) Cement and concrete mixing should only take place within the construction site. No concrete may be mixed directly on the ground.

- v) 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).

3.3 Waste management

- i) Construction waste refers to all construction debris and domestic waste produced during the construction phase.
- ii) The contractor will be responsible for the removal of construction waste.
- iii) Suitable containers should be placed on site to collect all solid waste. These should be emptied regularly.
- iv) No littering is permitted. During the construction period the site shall be maintained in a neat and tidy condition.
- v) 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.
- vi) No dumping, burning or burying of waste may take place on 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. One layer of bricks or stones is to be placed around the stockpiled topsoil to protect topsoil from washing away during rainstorms. 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) No fires should be made directly on the soil. 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*.

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) An alien plant control and monitoring programme is recommended.
- ii) Open stormwater channels on the property should be maintained in a well vegetated condition.
- iii) 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.
- iv) Soil erosion occurrences should be attended to immediately.
- v) The cemetery erf containing the cluster of graves should be maintained.
- vi) Erosion management is essential and areas affected by erosion should be attended to immediately.

5. DECOMMISSIONING /CLOSURE

Not applicable.

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.