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ENVIRONMENTAL MANAGEMENT PROGRAMME

**PROPOSED TELECOMMUNICATION MAST FOR VODACOM – BS 0151974 RIETPAN
(PORTION 28 OF THE FARM GROENFONTEIN NO 395 IR)
REF NR GAUT 002/19-20/E2405**

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ENVIRONMENTAL MANAGEMENT PROGRAMME: INFORMATION SHEET

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I, Elaine Minnaar declare under oath that of –

- 1) The correctness of the information provided in the reports;
- 2) The inclusion of comments and inputs from stakeholders and I&AP's;
- 3) The inclusion of inputs and recommendations from the specialist reports where relevant;
- 4) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs by interested and affected parties.



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Abbreviations and Definitions

Construction Footprint:	The area of the Cellular telecommunications base station site including a 2m radius around the site.
Compliance:	Conforming to the environmental control measures set out in the EMPr
Contractor:	Contractor refers to the main contractor appointed by the client to complete the construction.
EC:	Environmental Consultant. Individuals or firms whose role it is to act as independent, objective environmental information providers to stakeholders in order to inform the decision making process.
EIA:	Environmental Impact Assessment
EMPr:	Environmental Management Programme
Environment:	The surroundings within which people exist. The environment is made up of: the soil, water and atmosphere; fauna and flora; any pert, combination or interrelationships among these; and all the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well being.
Environmental Impact:	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.
Interested Party:	Individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities,

investors, work force, customers and consumers, environmental interested groups and the general public

EA:

Environmental Authorisation

1. Background and Project Description

The project entails the Construction of a 45m Lattice Mast within the footprint size of 10m x 10m area and a support container. The site is to accommodate three service providers.

The site is situated approximately 6,7km west of the R51 and 8,7km north east of the R23, Lesedi Local Municipality.

The specific position where the mast is proposed to be erected is on the side slope of a koppie to the east of an existing commercial use.

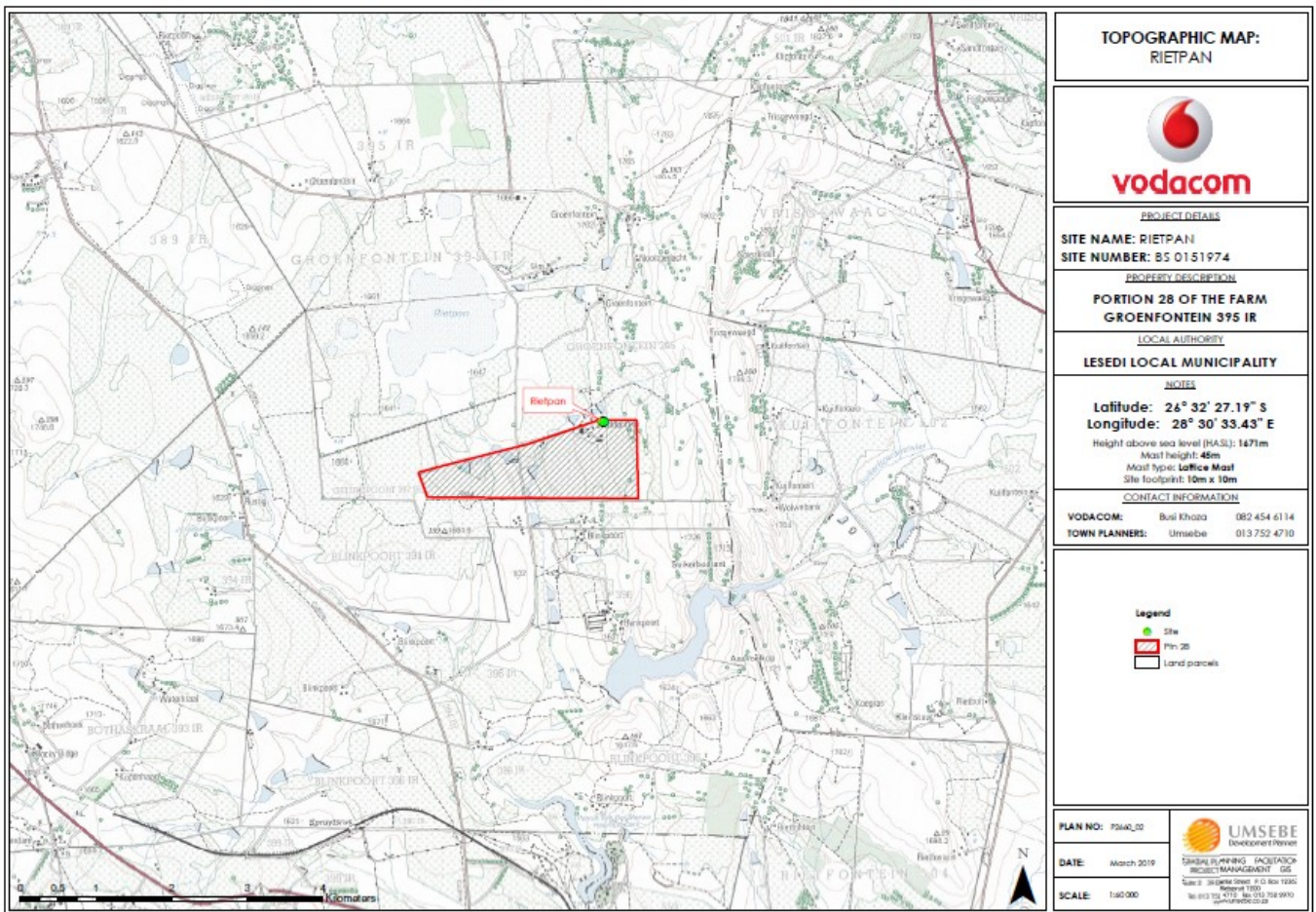


Figure1: Site locality

2. Purpose

In terms of the South African Constitution (Act No. 108 of 1996) people have the right to an environment that is not harmful to their health or well being and to have the environment protected for the benefit of present and future generations. This goal is to be pursued through reasonable legislation as well as other means that prevent pollution and ecological degradation, promote conservation and the sustainable use of natural resources while promoting justifiable economic and social development.

The purpose of the Environmental Management Programme (EMPr) is to act as an instrument to be used by Vodacom to manage and mitigate the environmental impacts associated with the construction, rehabilitation and decommissioning activities of the proposed cellular telecommunications base station at Rietpan.

The EMPr is to be implemented in a co-operative spirit with all parties (i.e. the project proponent, contractor, as well as interested and affected parties) involved and affected by the construction of the base station.

The Mobile Telecommunications industry is not a high environmental impact industry, if equated with industries such as mining. It is, however still necessary and important to Vodacom that the impacts of the cellular telecommunications base station be mitigated.

3. Scope of Environmental Management Programme

The objective of this EMPr is to mitigate the effect of the installation of the telecommunications base station on the surrounding environment by aiming to reduce nuisance factors and the danger of adverse impacts on the environment during construction and to provide a plan for effectively managing the base station thereafter and to:

- Ensure that all pertinent environmental issues and the concerns of MDARDLEA are addressed;
- Determine environmental conditions and sensitivities of the site and areas outside that may be impacted on by the project;
- Ensure acceptability of design and construction practices with respect to identified impacts and prescribed mitigation measures;
- Provide strategies for obtaining and/or complying with all environmental approvals, permits and agreements, and to provide a monitoring program;
- Integrate environmental strategies with all design and construction work; and
- Provide input and strategies for environmental quality control and risk management during all phases of the project.

This plan aims to ensure that:

- Environmental management considerations are understood and implemented from the outset;
- Precautions against damage are taken; and the
- Impacts of the development on the environment are minimised.

4. Environmental Control Measures

This EMP outlines measures to be implemented to minimise any potential environmental degradation associated with the construction of the development. It will serve as a guide for the Contractor and the construction workforce about their roles and responsibilities for environmental management on the construction site and provide a framework for environmental monitoring throughout the construction period.

Measures to control potential environmental impacts during the construction phase are specified. Except where otherwise stated, all these control measures apply throughout the construction period and, as part of the project contract, the Contractor shall adhere to these measures at all times.

5. Contractual Considerations & Responsibilities

The Contractor should be handed a copy of all relevant documentation regarding the project and should before any work is conducted ensure that the Construction Supervisor is familiar with the environmental issues on site.

A commitment from the Contractor is required on the following issues:

- Consideration for the inhabitants in the area;
- Professional behaviour on and off site;
- Ensuring the quality of work done, whether technical or environmental is of a high standard;
- Immediately resolving problems and claims arising from damage to ensure a smooth flow of operations;
- Using this Environmental Management Programme for the benefit of all involved;
- Preserving the natural environment by limiting destructive actions on site; &
- Not littering.

The Contractor is responsible for, but not limited to, the following:

- Overall construction management of all tasks applicable to the civil site build (Mast foundation, mast erection, container slabs, fencing, electrical, site works, etc.);
- All work involved in preparing the site and making it suitable for the mast erection;
- All work involved in preparing the site and making it suitable for equipment installation;
- Mast foundation construction as per mast engineer's design applicable to the site-specific soil conditions. Soil tests to be done by the contractor to verify design parameters;
- Supply of fence;
- Installation of a fence and gate;
- The installation of required antenna poles/clamps (MW and GSM);
- The installation of the required cable support system (cable trays);
- Installation of a key deposit box, if necessary;
- Installation of a new lightning protection and earthing system;
- Electrical work;
- The painting of the tower, fence and equipment;
- Obstruction lighting system for the tower;
- Producing site-specific as build documentation as specified; &
- Installing all warning labels and signs.

6. Pre-Construction and Construction Phase

For the purpose of this EMPr the construction phase is examined in terms of the following categories.

1. Setting out and site orientation;
2. Site clearance;
3. Laying of the concrete casts;
4. Preparing the foundation for the fence and construction thereof;
5. Placing the Mast and Container; and
6. Connecting all relevant components e.g. electrical, antennas.

6.1 Setting out & site orientation

Site setting out lines and construction datum and levels, are to be determined by the Contractor in accordance with the Vodacom (Pty) Ltd representative as well as the general guidelines of these specifications and the drawings, and shall also satisfy the specific Contract Specification requirements.

Setting out markers for ground level fenced sites where provided by the Employer on the site of the works indicate the setting out line (fence line) parallel to and nearest to the equipment shelter and tower foundation.

6.2 Site Clearance

Site clearing starts with the scraping of a 10m by 10m area. This phase also includes the excavation for the manholes and the base for the mast. Additional clearance will be conducted for the construction of the access road which will measure approximately 45m

6.2.1 Environmental Impact

- Loss of indigenous vegetation, fauna habitat and displacement of fauna
- Infestation by alien species
- Loss of topsoil
- Dust
- Noise

6.2.2 Mitigatory Measures

- No construction related activities, such as the site camp, storage of materials, temporary roads or ablution facilities may be located outside the site;
- Fence the site and confine all construction activities to the site. The fence structure should be permeable to allow free dispersal of smaller fauna taxa;
- Vehicle movement must be confined to an access road to and from the site;
- No clearing of vegetation may take place outside the site;
- Suitable indigenous vegetation (flora) must be selected and used for rehabilitation;
- Monitor the site for the establishment of invasive plant species;
- Compile an Alien and Invasive Species Management Plan for the site;
- All site clearing and excavations are to be done as far as possible during standard working hours in order to limit the noise nuisance to the surrounding communities;
- During excavation dust generation is to be kept to a minimum by the appropriate wetting of the surface. This includes the access road and surrounding disturbed areas. A tanker of water may need to be brought on site if there is no water point available nearby;
- The topsoil is to be kept separate in a demarcated area within the immediate vicinity for rehabilitation;
- All construction waste is to be stored in a designated area. It is recommended that a skip be used on site to store all waste. Waste rock generated during construction is to be sent to a permitted landfill site;

- Appropriate fire-breaks must be planned and used on site;

6.3 Laying of the concrete casts

The casts for the container, mast and manholes are filled with concrete and reinforced with steel rods. All concrete mixing is done offsite and brought to the site via a concrete mixing truck. However, for snag repairs, concrete may be mixed on site.

6.3.1 Environmental Impact

- Concrete runoff
- Pollution of water

6.3.2 Mitigatory Measures

- For minimum impact on the environment with regards to laying of concrete, ready mix concrete will be delivered by truck during standard working hours. In the event that concrete is mixed on site it will be done in a controlled manner. Any area disturbed is to be rehabilitated. It is the responsibility of the Project Manager to ensure that the concrete mixing area is rehabilitated.
- When casting concrete foundations, care must be taken to avoid spilling concrete on the site. Any material spilled must be collected and disposed of with the other waste material from the site.
- All construction waste is to be stored in a designated area. It is recommended that a skip be used on site to store all waste.

6.4 Preparing the foundation for the fence and it's construction

The foundation is dug around the 10m x 10m excavation. Once the container and mast have been laid, the fence is placed around the site.

6.4.1 Environmental Impact

- Displacement of material
- Noise

6.4.2 Mitigatory Measures

- The Contractor shall ensure that all work that could create noise is done during standard working hours (8:00am to 17:00pm).
- The rock and rubble removed during this phase of construction is to be taken offsite and disposed of at a registered landfill site. A permit shall be obtained from the landfill site confirming this disposal.

- All concrete mixed on site will be done in a designated area. Concrete bags are to be stored in a dry area. Runoff from the designated area is to be monitored for any concrete effluent. Any area disturbed is to be rehabilitated.

6.5 Placing the mast and container

The container and mast are brought to the site via heavy duty vehicles. The mast sections are assembled on site and painted. The placing of the mast and container is done with a mechanical lifting machine. The mast and container are bolted to their respective foundations.

6.5.1 Environmental Impact

- Heavy duty vehicles on site
- Painting

6.5.2 Mitigatory Measures

- Vehicles are not permitted to enter any area designated as sensitive.
- All painting activities are to be done within a designated area. The Contractor is to ensure that all damage to the grass and surrounding vegetation is rehabilitated.
- Placing of the container to be done with a mechanical lifting machine during standard working hours to minimize any possible disturbance to the surrounding community. There must be adequate access to the site for turning of machines etc to prevent any damage to any natural surrounding vegetation. Machinery must be in good working order so as to prevent oil leaks. Any contaminated areas are to be rehabilitated;
- Vehicle movement must be confined to an access road to and from the site.

6.6 Connecting all relevant components

The antennas and electrical wires are connected to the radio equipment and the site is now ready to be commissioned. This is the end of the construction phase. A temporary power supply may be used on site to allow the base station to become operational if the installation of a permanent electricity supply is delayed and the operation of the base station is urgently required.

6.6.1 Environmental Impact

- Waste material
- Generator noise
- Oil spills

6.6.2 Mitigatory Measures

- The waste generated shall be disposed of at a registered landfill site and a permit obtained confirming this.
- The Contractor must ensure that all diesel emissions and noise levels of generators used on site are kept within national standards.
- In the event that a temporary power supply is used on site, the generator used must be in good working condition. If any diesel spillage takes place it is the Contractor's responsibility to ensure that the area is cleaned up immediately in an environmentally acceptable manner.

General Conditions regarding the construction phase

- The established road on the property must be used to access the site.
- Construction activities should be planned to **prevent erosion** and improve the landscape.
- In respect of the **construction camp**, the Contractor shall define the area of the construction camp and place it so as to have a minimal impact on the environment. The construction camp must be located in such a manner as to limit the movement of site personnel.
- Trampling and disturbance associated with construction should be limited to within the footprint of the construction site.
- Construction personnel must stay within the demarcated construction site boundaries at all times.
- The Contractor and his sub-contractors and/ or suppliers with all workmen shall observe all **security arrangements** normally in force at each site, together with any other arrangements which may be specified necessary for the duration of the Contract.
- Ladders, keys or other equipment which could be used to gain **unauthorised access** to the site or installations on the site shall be removed, or secured in such a way that they cannot be used by unauthorised personnel, whenever a site is left unattended.
- There will be ablution facilities provided on the construction site for use by the construction personnel.
- No littering is allowed on site.
- Washing of containers and equipment must only take place within appropriate designated areas of the construction site.
- A collection tray must be placed under machinery or equipment that has the potential to dispense hazardous substances. Hazardous substances must not be permitted to soak into the soil.
- All waste is to be disposed of correctly in the designated waste containers provided at the construction site.
- No waste will be illegally dumped on site.
- No waste will be buried or burnt on site.
- No waste will be stored outside of the site boundaries.
- No fires are to be made on site.

7. Operational Phase Management

The following features of the development must be managed during the Operational Phase:

7.1 Access and access road to the Cellular telecommunications base station

Access to the site and to any other properties served by any access road used by the Contractor is to be maintained at all times such that it does not give rise to dust.

7.2 Alien plants and weed encroachment

The removal of all invasive species and the emergence of invasive species must be continually monitored. Invasive species must be removed by hand or poisoned. The effectiveness of re-vegetation and erosion control must be monitored periodically after construction.

7.3 Waste and Litter

Checking the road and site for any litter and waste and removing any waste to a 10m radius around the site. Checking that there is no leakage from the batteries running outside the radio container. Before leaving the site, checking where the vehicle and/ or generator were parked for signs of oil. Checking that all parts replaced during maintenance, as well as any tools and equipment, are placed into the vehicle before departing.

7.4 Fencing; Mast and Equipment Container

Vodacom's maintenance contractors visit each Cellular telecommunications base station regularly (at least every six to twelve weeks), for repairs and maintenance.

7.5 Stormwater Management

An appropriate stormwater management plan must be in place.
Immediate remedial action should be taken when erosion is encountered.

8. Decommissioning Management

On termination of use of a Cellular telecommunications base station, all equipment is to be dismantled and removed and the site restored to its original state.

In the case of a full decommissioning, the decommissioning and rehabilitation processes can be summarised briefly as follows:

1. The removal of the Cellular telecommunications base station equipment and associated infrastructure, i.e. the mast, equipment container, the fence and foundations; the power box and associated power cables, the concrete foundations and manholes.

2. The re-contouring of the BTS site to its original state. If that is not possible the site must be contoured to blend in with the immediate surroundings.
3. The re-contoured area is to be re-vegetated with indigenous vegetation.
4. If the access road is not going to be utilized after the Cellular telecommunications base station has been removed, the road must be rehabilitated to its original state. Should the access road continue to be used the Regional Property Manager will be responsible for assigning the responsibility of regular maintenance for the access road to the person/ people who will still be using the road.

9. Conclusion

The function of this EMPr is to provide the Contractor with effective measures for minimizing the negative environmental impacts of the Cellular telecommunications base station during its lifetime, i.e. at the pre-construction stage, during construction, throughout the operational phase and at the time of decommissioning. Throughout the process, this guide will be referred to.

10. Amendments to the EMPr

This EMPr will be submitted to the Environmental Authority for approval prior to implementation. Any issues that may arise during the construction or operational phase which are not covered in this EMPr shall be addressed as addendums to the EMPr and submitted for approval prior to implementation.