



on the farm ELANDSKLOOF Number 168
in the municipal district of LAINGSBURG

CONSTRUCTION PHASE ENVIRONMENTAL MANAGEMENT PLAN (Version 3)

(last updated on 2012-05-25 per DEA&DP Conditions & Basic Assessment Report Mitigation Measures)

Environmental Assessment Practitioner – **Anneke de Kock**

Anneke de Kock Environmental Consultants
P O Box 6151, Uniedal, Stellenbosch, 7612
Tel - 021-866-1524
Fax - 086-564-1557
Mobile - 073-878-9221
e-mail - dekockae@mweb.co.za

Proponent – **Frik Linde**

Keissies Kannaland Boerdery Beleggings CC
P O Box 50, Laingsburg, 6900
Tel – 023-551-1946
Fax - 086-551-3613
Mobile – 082-969-8175
e-mail – frik@witteberg.co.za

This Environmental Management Plan has been updated:

- *As required by DEA&DP per condition 5 of the Environmental Authorisation issued by the Department dated 2010-07-27*
- *With all mitigation measures listed in the Basic Assessment Report*
- *With stand numbers as approved by the Surveyor-General's office and as pegged by the appointed surveyors*
- *With other relevant conditions imposed by various organs of state*

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1 INTRODUCTION

The proposed Witteberg Private Nature Reserve will involve the construction of holiday homes, central resort facilities and associated infrastructure.

The listed activity that triggered the requirement for an Environmental Impact Assessment was the following:

Government Notice R386, Activity No. 18: ***“The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less.”*** Specifically, this application approved the subdivision of 4365,68 hectares of land zoned as Agriculture I into 12 stands zoned as Resort Zone II totaling less than 0,3 hectares, with the remainder rezoned to Resort Zone I and Open Space III.

The following consultants / professionals / specialists were appointed by the proponent to perform various assessments, studies and associated planning activities with regards to this proposed development:

1. Anneke de Kock from Anneke de Kock Environmental Consultants: Basic Environmental Impact Assessment (EIA) and Environmental Management Plan
2. Willie Steyn from PraktiPlan Development Planners: Rezoning and subdivision application
3. S A Bureau of Standards: Water analysis
4. Johann Murray from MBB South (Pty) Ltd: Agricultural economics study
5. B Schloms & J Lambrechts from Soil Science Department, University of Stellenbosch: Soil survey
6. Tim Hart from the Department of Archaeology, University of Cape Town: Heritage Impact Assessment (HIA)
7. Dicey du Toit from DC Heritage Consulting: Cultural-historic study
8. Johan Malherbe (heritage architect) from MR Architects: Conceptual architectural design
9. Alwyn Steyl & Waldo Lindhorst from CK Rumboll and Partners: Surveyors
10. Chris Bester: Independent architect
11. Otto Low from Faure & Faure Attorneys: Conveyancer / Legal adviser

CapeNature was an important organ of state that provided valuable input to the proposed development during the planning stages. CapeNature will remain involved in the proposed development and subsequent operational phase of the Witteberg Private Nature Reserve through CapeNature's recommendation to register it as a Contract Nature Reserve under their conservation stewardship programme, which application is in progress..

The Environmental Assessment Practitioner (EAP), Anneke de Kock, who drafted this EMP studied at the University of Stellenbosch (B. Sc., B. Sc. Hons *cum laude* and M. Sc.) and completed an Integrated Environmental Management course (theory and practice) at the University of Cape Town. The main proponent, Frik Linde, who assisted the EAP with the EMP, studied at Johannesburg University (B. Sc.) and the Business School of the University of Stellenbosch (Hons. B. BM&A).

The Department of Environmental Affairs and Development Planning (DEA&DP) requested that the Environmental Management Plan (EMP) for the Construction Phase be updated as per the

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Environmental Authorisation dated 2010-07-27. As a result, the Construction Phase EMP has been updated accordingly.

As requested, officials of DEA&DP will be given access to the development property at all reasonable times for the purpose of assessing and/or monitoring compliance with the conditions contained in the environmental authorisation.

2 OBJECTIVES OF THE ENVIRONMENTAL MANAGEMENT PLAN

This Construction Phase Environmental Management Plan (EMP) is based on the principles of:

1. Sustainable development
2. Ethics and quality
3. Best practices

Sustainable development is defined by the National Environmental Management Act (Act No.107 of 1998) as “the integration of social, economic and environmental factors into planning, implementation and decision-making in order to ensure that development serves present and future generations”.

Ethics and quality include consistency with national, regional and local legislation, policies and plans.

Best practices include:

- An evaluation as to whether or not the actions and monitoring proposed are appropriate and address all of the management actions identified in the Basic EIA.
- Ensuring that the project proponent is committed to reviewing and continually improving the overall environmental management system
- Ensuring a broad level of commitment from all levels – management, contractors and the workforce - in order for the development and implementation of the Construction Phase EMP to be successful and effective
- Responsiveness to new and changing circumstances

The specific objectives of this Construction Phase EMP are as follows:

1. Ensuring compliance with regulatory authority stipulations and guidelines
2. Ensuring compliance with the Environmental Authorisation dated 2010-07-27
3. Verifying environmental performance throughout the construction phase
4. Responding to unplanned changes in project implementation not considered in the Basic EIA process, or elsewhere
5. Responding to unforeseen events
6. Providing feedback for continual improvement in environmental management that can be used in the operational phase EMP.

Construction activities must ensure that environmental damage does not occur or is minimised.

This Construction Phase EMP contains requirements that all appointed contractors will have to agree and adhere to throughout the duration of their contract, to prevent or reduce negative environmental impacts to the surrounding environment. As such, the Construction Phase EMP will form an addendum to all contractors’ agreements, together with the Environmental Authorisation dated 2010-07-27.

3 SCOPE OF THIS ENVIRONMENTAL MANAGEMENT PLAN

In order to achieve the objectives listed herein, the scope of this Construction Phase EMP covers the following aspects:

- Definition of the environmental management objectives to be adhered to during the construction phase in order to minimise adverse environmental impacts
- Description of the detailed actions needed to achieve these objectives
- Description of roles and responsibilities during construction
- Description of the links between the Construction Phase EMP and associated legislated requirements

This Construction Phase EMP includes those mitigation measures relating to the construction phase as proposed in the Basic EIA Report and all other specialist reports.

The operational phase is excluded from the scope of this Construction Phase EMP. The Operational Phase EMP is based on the prescribed framework relevant to the Gouritz Initiative, other CapeNature requirements, the ongoing biodiversity management aspects and the specific requirements contained in the Protected Areas Act, No 57 of 2003, which forms part of the registration process as a Contract Nature Reserve, which application is in progress. However, as stated, experiences gained during the construction phase will be incorporated into the Operational Phase EMP.

This Construction Phase EMP has taken into account all information available to date, including:

- Basic EIA Report as the principle source of information
- Heritage Impact Assessment Report
- Agricultural Economics Report
- Cultural-historic Study Report
- Architectural Design Report
- Published book, "Elandskloof in die Witteberge" by Hennie Steyl on the history of the development property
- Environmental Authorisation from DEA&DP dated 2010-07-27

However, the Construction Phase EMP will remain a living document and will be updated regularly as per experiences gained during the project. The Operational Phase EMP will also continually be updated with experiences gained during both the construction phase and the operational phase.

4 OVERVIEW OF THE PROPOSED ACTIVITY

The proposed Witteberg Private Nature Reserve is located on the farm Elandskloof Number 168 within the Magisterial District of Laingsburg.

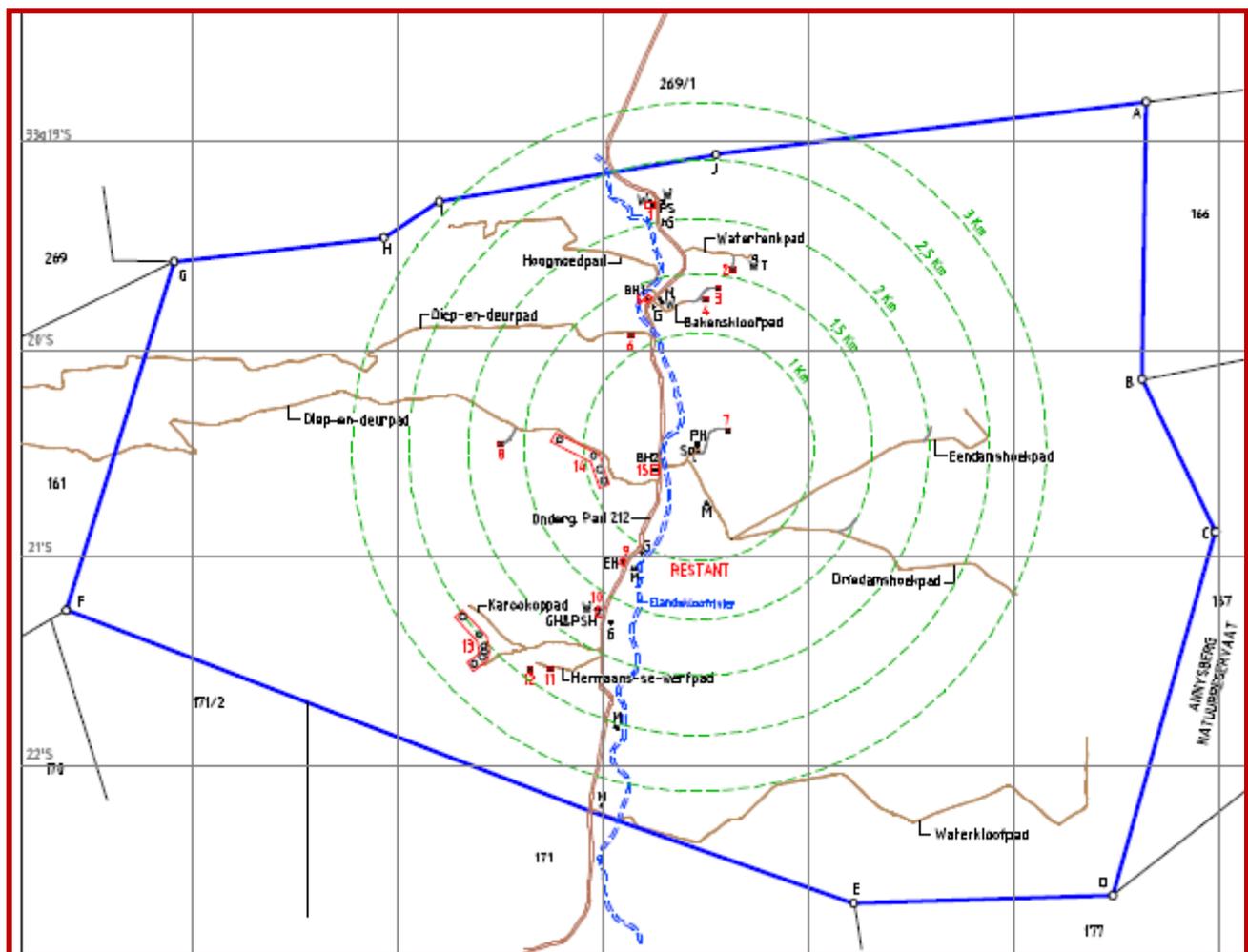
The property is situated southwest of Matjiesfontein in the heart of the Witteberg Mountains, just northwest of the provincial Anysberg Nature Reserve.

The adjacent land uses to the development consist of a mixture of extensive commercial farming, lifestyle farms and nature conservation areas, including the provincial Anysberg Nature Reserve managed and operated by CapeNature.

The extent of the property is 4365 hectares. The Title Deed Number is T000069285/2005.

Past extensive agricultural practices have resulted in overgrazing, but the land has been resting and without livestock for more than seven years and has shown a significant improvement in the condition of the veld.

The layout of the approved development alternative is depicted in the following diagram.



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The following new buildings need to be constructed and heritage buildings restored/renovated:

- New Resort Zone II holiday homes – 9 units (on stands numbered Elandskloof 168/3, 168/4, 168/5, 168/6, 168/7, 168/10, 168/11, 168/12 and 168/13 as approved by the Surveyor-General's office and pegged by the appointed surveyors)
- Restoration/renovation of historic buildings as Resort Zone II holiday homes – 3 units (on stands numbered Elandskloof 168/2 "Boonste Huis", 168/8 "Koos Ellis se Huis" and 168/9 "Grasdakhuis" as approved by the Surveyor-General's office and pegged by the appointed surveyors)
- New Resort Zone I holiday homes – three clusters of 2, 4 and 5 units respectively
- Restoration/renovation of one historic building, "Piet-se-Huis", and located on the Open Space III as the 12th short-term rental unit
- Central facilities including an office / reception, swimming pool and meeting room on the Open Space III
- Restoration/renovation of the historic school building as a museum on the Open Space III

Related infrastructure construction activities are as follows:

- Water connection pipelines for some new resort zone II building sites
- Water connection pipeline for the central facilities, including the swimming pool
- Extension of water supply pipeline to serve:
 - Resort zone I cluster (4 units) with individual unit connection pipelines
 - Resort zone I cluster (5 units) with individual unit connection pipelines
 - Some resort zone II building sites and the historic building, Piet-se-Huis, on the Open Space III
- Improvement of existing roads serving some resort zone I and resort zone II building sites
- Construction of short link roads from existing service roads to some resort zone I and resort zone II units
- Construction of reed-beds for grey water processing purposes
- Installation of solar power systems
- Fixing the external fences along the boundary of the property
- Construction of an entrance gate with an access control system

All project staff will be housed in existing staff accommodation units during their stay on the property.

Construction of holiday homes and related infrastructure will only commence once units have been sold off plan.

Construction of the central facilities complex will only commence after the first holiday home has been sold off plan and will continue in parallel with the construction of new holiday homes and the renovation of historic buildings.

Related infrastructure required for every new building will only be constructed just prior to the commencement of building operations. The related infrastructure will therefore be phased-in as and when required at new building sites.

5 LEGAL REQUIREMENTS

All contractors and sub-contractors will be required, through their respective contracts of appointment, to ensure that all pertinent legislation concerning the protection of the natural environment, prevention of pollution and heritage conservation is adhered to at all times.

The Construction Phase EMP will form part of the contractual obligations of all contractors engaged in the project, together with the Environmental Authorisation from DEA&DP dated 2010-07-27 and specifically the conditions of authorisation contained therein.

Although all applicable environmental legislation applies to everybody by default, the purpose herein is to focus the attention of contractors on applicable environmental and related legislation.

5.1 CONSTITUTION

The Constitution of the Republic of South Africa sets the legal context in which environmental legislation in South Africa occurs and was formulated. All environmental aspects should be interpreted within the context of the Constitution.

5.2 ENVIRONMENTAL MANAGEMENT

The objective of all National Environmental Management Acts is to provide co-operative governance by establishing principles for decision makers on matters affecting the environment, institutions that promote co-operative governance and procedures for co-ordinating environmental functions exercised by the organs of state.

The Acts establish a number of principles related to the environment in South Africa. These principles are designed to provide a general framework for environmental planning and guidelines for the interpretation, administration and implementation of the Act.

A list of activities requiring Environmental Impact Assessments was published and is updated from time to time. In the case of this development, the applicable activity is the following:

- Activity No. 18: The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less

5.3 WATER MANAGEMENT

The National Water Act 36 of 1998 ensures that water resources are adequately protected, used, developed, conserved and controlled.

The National Water Act is also the principal piece of South African legislation governing wastewater management. It also deals with pollution prevention and remedying effects and in particular the situation where pollution of a water resource occurs or might occur as a result of activities on land.

5.4 WASTE MANAGEMENT

Waste management is regulated by the Environment Conservation Act of 1989. It defines waste as any matter, whether gaseous, liquid or solid (or a combination thereof) which is designated to be an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.

In the Environmental Authorisation, the Western Cape Department of Environmental Affairs and Development Planning emphasised that an integrated waste management approach must be used that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.

5.5 HERITAGE MANAGEMENT

The National Heritage Resources Act (Act No. 25 of 1999) was introduced to ensure protection of South Africa's important heritage features. As such, the act covers 4 billion years of history.

The act covers the following areas of heritage value:

- Archaeology
- Palaeontology
- Meteorites.

5.6 OTHER LEGISLATION

Other legislation to be complied with includes, but is not limited to:

- The National Building Regulations and Building Standards Act (No 103 of 1977)
- Conservation of Agricultural Resources Act (No 43 of 1983) and the regulations dealing with declared weeds and invader plants as amended from time to time
- National Veld- and Forest Fire Act (No 101 of 1998)
- Occupational Health and Safety Act

6 RISK OF ENVIRONMENTAL IMPACTS

The environmental impacts expected from the proposed activity are very limited, for the following reasons:

- Construction of new buildings and renovation of historic buildings will be limited to an overall surface area of less than one hectare
- Construction of water supply line extensions, access road extensions and sewage system components will be limited to an overall surface of less than one hectare
- External fences already exist and only require repair work

The above must be seen relative to the total property size of 4365 hectares, which amounts to less than 0,045% of the total property area.

The positive impacts are that more than 4363 hectares will be set aside for conservation of the Witteberg fynbos and the heritage elements present on the property.

The risk of negative environmental impacts occurring is therefore seen to be low. However, all expected risks are covered in this Construction Phase EMP, together with mitigation measures.

7 ROLES & RESPONSIBILITIES

The following key roles are provided for in this Construction Phase EMP:

- Project Manager / Environmental Control Officer
- Contractor(s)
- Project Proponent

The following sections describe the responsibilities associated with each of the above roles:

7.1 PROJECT MANAGER / ENVIRONMENTAL CONTROL OFFICER

The Project Manager (PM) for the development will be the overall responsible person during the construction phase and will be appointed by the project proponent prior to the appointment of any contractors and prior to the commencement of any construction activities.

Due to the relative small scale of the activities in progress at any one time, a full-time Environmental Control Officer (ECO) will not be required. As a result, the Project Manager will also be required to assume overall responsibility for the environmental aspects related to the construction activities of the Witteberg Private Nature Reserve. However, the requirements of the Project Manager will include suitable experience and qualifications to ensure that the role of ECO can also be fulfilled.

An important part of this role will be to:

- Be familiar with the contents of the Construction Phase EMP
- Undertake at least twice-weekly site visits and site inspections to ensure that environmental requirements are implemented
- Assume responsibility for compliance with all environmental legislation and regulations during the construction phase in order to ensure effective minimisation of all possible environmental impacts caused directly or indirectly by any project activity
- Ensure that the Construction Phase EMP is included as an addendum in all contracts with suppliers and other contractors
- Establish and maintain regular and proactive communications with all contractors
- Ensure that all contractors and their employees are conversant and comply with all relevant measures contained within the Construction Phase EMP
- Issue site instructions giving effect to the environmental requirements where applicable
- Communicate to all contractors regarding any proposed actions which may have significant negative impacts on the environment
- Undertake damage assessments and enforce corrective action where incidents, accidents and serious infringements have occurred
- Report any significant environmental incident or impact to the relevant environmental authority

- Inspect and approve all areas where the contractor has been active, ensuring no negative impacts have occurred
- Act as the contact person for any public complaints or issues raised during the construction phase
- Ensure that contractors and their staff do not trespass on any properties adjoining the development property
- Enforce penalties for the infringement of the Environmental Specifications and other possible enforcement measures if and when necessary
- Implement temporary work stoppages where serious environmental infringements and non-compliances have occurred
- Ensure the Construction Phase EMP is fully implemented and revised as and when required
- Keep a dated photographic record of progress on site from an environmental perspective
- Provide the proponent with weekly written reports regarding:
 - Construction progress
 - Environmental regulations and Environmental Authorisation requirements, including adherence to and implementation of all mitigation measures and all recommendations referred to in all approvals from organs of state and the conditions contained therein

The PM has the power to remove from site any person who is in contravention of the Construction Phase EMP, and if necessary, the PM can suspend part or the whole of the works, if deemed necessary.

7.2 CONTRACTOR

Specifically related to the Construction Phase EMP, the responsibilities of all Contractors working on site will be to:

- Be familiar with the contents of the Construction Phase EMP
- Implement the Construction Phase EMP for the duration of the contract
- Take responsibility for ongoing monitoring and control of all construction activities concerning minimisation of environmental impact and adherence to the Construction Phase EMP for the duration of the works
- Ensure that all sub-contractors and other workers appointed are aware of their environmental responsibilities while on site
- Provide appropriate resources for the effective control and management of the environmental risks associated with the construction works
- Comply with all revisions that are applied to the Construction Phase EMP during construction activities
- Confirm legislative requirements for the construction works, ensuring that appropriate permissions and permits have been obtained where required before commencing activities
- Prepare drawings and a programme of activities for submission to the PM

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- Undertake at least weekly site inspections with the PM to monitor environmental performance and conformance with the Environmental Specifications
- Notify the PM immediately in the event of any accident infringements of the Environmental Specifications and ensure appropriate remedial action is taken
- Notify the PM in advance of any activity he has reason to believe may have significant adverse environmental impacts, so that mitigation measures may be revised and implemented
- Ensure environmental awareness among his employees and sub-contractors so that they are fully aware of, and understand the Environmental Specifications and the need for them
- Undertake rehabilitation of all areas affected by construction activities to restore them to their original states, as determined by the PM
- Undertake the required works within the designated working areas
- Ensure that sub-contractors and workers do not trespass on any properties adjoining the development property
- Communicate and liaise frequently and promptly with the PM to ensure effective, proactive environmental management with the overall objective of preventing or reducing negative environmental impacts while enhancing positive environmental impacts
- Specifically adhere to the conditions of the Environmental Authorisation dated 2010-07-27 which form part of this EMP
- No Sub-Contractors will be appointed without the prior written permission of the proponent
- Make provision for the financing of all environmental control measures in project cost quotations to ensure compliance with this Construction Phase EMP
- Penalties will be issued for non-compliances where the Contractor inflicts non-repairable damage upon the environment or fails to comply with any of the environmental specifications. He shall be liable to pay a penalty over and above any other contractual consequences.
- The Contractor is deemed NOT to have complied with this Construction Phase EMP if there is evidence of contravention within the boundaries of the site or along access roads, if environmental damage ensues due to negligence or of the Contractor fails to comply with corrective or other instructions issued by the PM within the specified time
- Any penalty monies will become the property of the proponent
- If non-compliance is not addressed to the satisfaction of the PM within specified timeframes, an independent organisation will be appointed to undertake the rehabilitative works. The cost of this work will be withheld from the Contractor's final payment
- Non-compliance with the conditions of the Construction Phase EMP constitutes a breach of Contract

7.3 PROJECT PROPONENT

The Project Proponent remains ultimately responsible for the entire development, the implementation of the Construction Phase EMP and ensuring that all the conditions in the Environmental Authorisation issued by the Department of Environmental Affairs and Development Planning, as well as conditions imposed by other organs of state, are adhered to by all concerned.

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In the event that transgressions by any Contractor are not remedied to the satisfaction of the Project Proponent timeously or transgressions continue, the Project Proponent may cancel the Contract forthwith.

8 POSSIBLE NEGATIVE IMPACTS AND THEIR MITIGATION MEASURES

The possible negative environmental impacts that could occur, including all those covered in the Basic Assessment Report (BAR), are summarised as follows:

1. Damage to the natural environment
2. Veld fires
3. Damage to historic buildings during renovation activities
4. Damage to archaeology and palaeontology
5. Accidents and / or damage during the transportation and storage of construction materials and equipment
6. Pollution of water sources caused by solid waste or sewage
7. Ignorance of contractors and their staff

The mitigation measures covered herein and which include those from the BAR, are aimed at eliminating, offsetting, or reducing adverse environmental impacts and are based on the following general principles, namely:

- Avoidance: Avoiding activities that could result in adverse impacts and avoiding areas considered sensitive
- Prevention: Measures aimed at preventing the occurrence of negative impacts
- Minimisation: Limiting or reducing the degree, extent, magnitude or duration of adverse impacts
- Rehabilitation: Repairing affected resources, such as natural habitats or water sources in the event that they are affected
- Restoration: Restoring affected resources such as heritage buildings to an earlier (and possibly more stable and productive) state

Specific mitigation measures for the above listed possible negative environmental impacts that could occur during the construction phase, are covered herein.

8.1 NATURAL ENVIRONMENT

To help ensure that the veld surrounding building sites is not impacted, building site boundaries will be fenced-in or suitably enclosed before building construction activities commence. All contractors will be limited to working only within these demarcated sites.

Collection of plants, wood or twigs from the veld for whatever reason, including for firewood or kindling, is not allowed as this not only disturbs the environment, but some plants found on the development property are extremely toxic.

Except to the extent necessary for the carrying out of construction activities within the enclosed building sites, flora shall not be removed, damaged or disturbed. No vegetation shall be planted.

Trapping, poisoning and/or shooting of any animals or birds is strictly forbidden.

Contractors and their workers will not be permitted to bring any pets or livestock or any other animals to the development property.

8.2 VELD FIRES

To help ensure that veld fires will not be caused, all contractors and sub-contractors will be instructed to store all flammable materials such as paint and fuel at a safe location, namely the existing central storage facilities near the staff housing complex.

No on-site burning of any waste materials, litter or refuse shall occur.

The Contractor shall take all the necessary precautions to ensure that fires are not started as a result of any construction activities on the property.

No open fires shall be permitted on building sites or anywhere on the property. Fires will only be allowed at accommodation units in the braai units and fireplaces provided. All fires are to be properly extinguished before leaving the accommodation units.

Smoking shall not be permitted on building sites, the central storage area, the workshop and any areas where the vegetation or other material is such that it could support the starting or spreading of fires.

The Contractor shall ensure that there is basic fire-fighting equipment available on building sites at all times, including rubber beaters and at least one fire extinguisher of the appropriate type.

8.3 HISTORIC BUILDINGS

The restoration of historic buildings will be done under the strict guidance of the appointed heritage architect and no work is to be performed without the prior approval of the heritage architect.

8.4 ARCHAEOLOGY AND PALAEOLOGY

No construction work will occur on or near archaeological and / or paleontological sites.

Many historic stone- and mud structures are visible all over the property, including several graveyards, and workers will not be allowed on such sites on the development property.

No historic structures, graves, graveyards, stone walls or any other paleontological or archaeological artefacts on the property must be damaged or moved during construction activities.

No archaeological and / or paleontological objects or artefacts are to be removed from the development property, including fossils, rocks, crystals, skulls, bones, Stone Age artefacts, etc. Any person who causes intentional damage to archaeological or historical sites and or artefacts could be prosecuted in terms of the National Heritage Resources Act.

The Contractor shall not deface, paint, damage or mark any natural features (e.g. rock formations) situated on the property.

If any archaeological or paleontological artefacts are uncovered during excavation activities, all work on and in the vicinity of the find shall be stopped immediately. The contractor shall take all reasonable precautions to prevent any person from removing or damaging any such artefact and shall upon discovery thereof immediately inform the PM. The PM shall then notify the relevant authorities (Heritage Western Cape), propose mitigation measures and obtain authorisation to implement such mitigation measures. Work may only resume once authorisation has been received in writing from HWC.

8.5 TRANSPORTATION AND STORAGE

All contractor vehicles and transportation vehicles are to use only the route depicted in the following diagram via Divisional Road 1469 and Secondary Road 6132 to reach the development property.



This route is not only the safest and shortest route from the N1, but the only route that is suitable for heavy transport vehicles.

The Secondary Road 6132 has been de-proclaimed from the entrance gate to the development property, thereby having enabled the implementation of access control. All contractors are to strictly adhere to the access control and security mechanism implemented at all times. The proponent is therefore also responsible for the maintenance of all roads within the development property, so any undue road damage will not be tolerated and will be for the account of the relevant contractor.

The use of construction vehicles within the property must be done in such a manner as to minimize the chance of harm or nuisance to wildlife, birdlife and damage to the Witteberg flora. The speed limit within the development property varies between 30 and 40 kilometres per hour and must be adhered to by all drivers.

The Contractor shall ensure that any delivery drivers are informed of all procedures and restrictions required to comply with the Construction Phase EMP.

The Contractor shall ensure that delivery drivers are supervised during off-loading by someone with an adequate understanding of the requirements of the Construction Phase EMP.

During transport, materials shall be appropriately secured to ensure safe passage between destinations. Loads including, but not limited to sand, stone chip, refuse and cement, shall have appropriate cover to prevent them spilling from the transport vehicle during transit.

The Contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

All construction material shall be stored at the central storage facilities at the staff housing complex.

All lay down areas shall be within the fenced-off or enclosed area at building sites and subject to the PM's approval.

All gravel, fill, soil and sand materials brought to the property shall be free of alien invasive seed matter and shall be obtained from sources approved by the PM. The Contractor shall ensure that such materials do not blow or wash away and if such materials are in danger of being washed or blown away, the Contractor shall cover it with a suitable material, such as hessian or plastic.

8.6 WATER SOURCES

In order to prevent pollution of underground water and watercourses, the following will apply to solid waste management:

- No on-site burying or dumping of any waste materials, litter or refuse shall occur
- The Contractor shall provide vermin and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced
- Waste bins shall not be allowed to become full and shall be emptied on a regular basis
- The waste from bins may be temporarily stored at the central waste storage area that is scavenger-proof and which the PM has approved
- Recyclable waste shall be disposed of into separate bins and removed to the Laingsburg Municipal dump for recycling purposes
- All solid waste not re-used on-site shall be disposed of off-site at an approved landfill site

All water to be used by staff and for construction purposes will be from the local water supply system and must be used sparingly. The Contractor shall not permit his employees to make use of any natural water sources such as streams, dams, ponds or manmade dams for the purposes of swimming, personal washing and the washing of machinery or clothes.

Wastewater generated on the construction site from the operation and cleaning of construction equipment, shall not be allowed to flow into any watercourse and must permeate through the ground on the enclosed building site.

Cement and concrete batching must occur within the enclosed building sites. Used cement bags shall be disposed of in bins on site to prevent the bags from blowing away. The contractor must ensure that concrete is mixed on mortarboards and that all visible remains of concrete are removed and disposed of as solid waste.

The Contractor shall provide the necessary mobile toilets (e.g. trailer mounted) on building sites for all personnel prior to the commencement of construction work by the Contractor. Chemicals used in such toilets are not to be disposed of on-site. The Contractor shall ensure that no spillage occurs when the toilets are cleaned, emptied or transported and that the contents are removed from the property. Toilets shall be emptied before any holidays or any other temporary closure of the works.

Ablution facilities are available at the accommodation units that will be made available to construction workers. Washing, whether of the person or of personal effects, is strictly prohibited other than at the facilities provided. No accommodation for any staff will be permitted on the building site and only the staff accommodation provided by the proponent may be used.

All domestic waste generated on the site must be disposed of in the bins provided at the staff accommodation units. Contractors must inform workers of the facilities and procedures for the disposal of waste.

8.7 ENVIRONMENTAL AWARENESS AND TRAINING

Environmental awareness and training by Contractors for all their staff is vital in order to perform their construction tasks in compliance with all the provisions in the Construction Phase EMP. It is also incumbent upon the Contractor to convey the sentiments of the Construction Phase EMP to all staff involved with the construction works.

The following will be required from all Contractors:

- Induction course for all workers on site, before construction work commences
- Induction course for any new workers that may join the team from time to time, before they commence any construction activities
- Refresher courses to be provided as and when required
- Daily briefing sessions at the start of each day, where workers are alerted to particular environmental concerns associated with their tasks for that day

The training course is to be reviewed and approved by the proponent beforehand.

9 INTEGRATED WASTE MANAGEMENT PLAN

An integrated waste management plan will have to be provided by all appointed contractors as part of their project descriptions and quotations. The waste management plan is to be based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.

Based on the architectural design and off-site, pre-fabrication construction techniques planned, limited rubble should be generated. However, if any rubble will be produced which is suitable for landfill, it will be used for landfill where erosion has been caused by previous poor management systems.

At all building sites, the site needs to be demarcated by the contractor before commencement of any work or delivery of any construction materials. All working and storage areas must be contained within the demarcated area(s). Cement and concrete batching must occur within the enclosed building sites. Concrete must be mixed on mortarboards and all visible remains of concrete must be removed and disposed of as solid waste. Staff accommodation will not be permitted on the enclosed building site.

Household waste and rubble not suitable for landfill (if any) must be transported to the Laingsburg Municipal waste disposal site on a regular (at least weekly) basis.

In general, any solid waste generated by contractors must be disposed of at a landfill site licensed in terms of Section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or the National Environmental Management: Waste Act (Act No. 59 of 2008).

No on-site burning of any waste materials, litter or refuse will be allowed.

No on-site burying or dumping of any waste materials, litter or refuse will be allowed.

All contractors shall provide vermin and weatherproof bins with lids to store solid waste.

Waste bins will not to be allowed to become full and need to be emptied on a regular basis. Waste from bins must be temporarily stored at the central waste storage area which is scavenger-proof.

All recyclable waste must be disposed of into separate bins and removed to the Laingsburg Municipal dump for recycling purposes.

All wastewater generated on the construction sites from the operation and cleaning of construction equipment will not be allowed to flow into any watercourse.

All used cement bags must be disposed of in bins on site to prevent them from blowing away.

10 MANAGEMENT REVIEW & REVISION OF THE EMP

This Construction Phase EMP will be subject to periodic reviews and updates – at least monthly – to ensure that it remains relevant to changing circumstances as construction work progresses.

Changes to the Construction Phase EMP could be brought about by several factors, including:

- Inadequate mitigation measures that do not have the desired effect
- Secondary impacts that occur as a result of some of the mitigation measures
- Occurrence of unanticipated impacts or impacts of greater significance, intensity and extent than initially expected
- Lessons learnt from incidents during construction

The management review should include the following persons:

- Proponent
- PM / ECO
- Contractor
- The Environmental Consultant or any other consultants that were used for any of the specialist reports prepared during the planning stages of the development project if deemed necessary by the PM / ECO

Any updates to the Construction Phase EMP should be reflected as addendums to the agreements with contractors.

APPENDIX A: CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

Although the relevant conditions of the Environmental Authorisation have been incorporated into this EMP, it remains the responsibility of all contractors to ensure that all the conditions of the Environmental Authorisation have been, or are, adhered to by all concerned, including the project proponent. These conditions, extracted from the Environmental Authorisation, are as follows:

1. The activity, including site preparation, may not commence within 20 (twenty) days after receipt of this environmental authorisation. In the event that an appeal notice and subsequent appeal is lodged with the competent authority, the effect of this environmental authorisation will be suspended until such time as the appeal is decided.

2. One week's notice, in writing, must be given to the Directorate: Integrated Environmental Management (Region A), (hereinafter referred to as "this Directorate"), before commencement of construction activities.

2.1. Such notice shall make clear reference to the site location details and reference number given above.

2.2. The said notice must also include proof of compliance with the following conditions described herein: Conditions: 1, 5, 6 and 8.

3. The mitigation/rehabilitation measures and recommendations as detailed in the Basic Assessment Report dated 27 January 2010 compiled by Anneke de Kock of Anneke de Kock Environmental Consultants must be adopted and implemented.

4. Should any heritage remains be exposed during excavations, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)). Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.

4.1. If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, marine shell heaps, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to Heritage Western Cape and must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape..

4.2. If any graves or unmarked human burials are discovered, they must be treated with respect and SAHRA must be notified immediately and must not be disturbed further until the necessary approval has been obtained from SAHRA. An archaeologist must be contracted to remove the remains at the expense of the developer.

5. The Environmental Management Programme ("EMP") submitted as part of the application for environmental authorisation must be amended. The contents of such an EMP must -

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- 5.1. be approved by the Department before the commencement of any construction activities;
- 5.2. be submitted to the Directorate for consideration at least three weeks prior to construction activities commencing;
- 5.3. meet the requirements outlined in Section 24N (2) & (3) of the National Environmental Management Act, 1998 (Act no 107 of 1998, as amended) ("NEMA") and regulation 34 of the Environmental Impact Assessment Regulations 2006;
- 5.4. incorporate the conditions of authorisation given in this Environmental Authorisation;
- 5.5. An integrated waste management approach must be used that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.
 - 5.5.1. Any solid waste must be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or the National Environmental Management: Waste Act (Act No. 59 of 2008).
- 5.6. address, but not be limited to, the demarcation of the site, the erection of camp site for construction teams, establishments of working and storage areas, environmental awareness training of employees, protection of flora, fauna, natural features and any archaeological material of significance that may be discovered, cultural issues (e.g. protection of archaeological artefacts), landscaping and revegetation of indigenous plants and trees erosion prevention methods, refuse and waste management, dust and noise control, effluent and storm water management, materials used, the handling, storage and transport of fertilizers or other hazardous materials, site rehabilitation and/or revegetation, fencing, fire prevention measures, the complete removal of all alien invasive plants and fire prevention measures, pollution control measures, monitoring and reporting, penalties, claims and damages.
- 5.7. translate mitigation measures contained in the BAR into measurable actions that can be included in a monitoring protocol with specific time frames;
- 5.8. specify reporting on the monitoring to enable verification of the effectiveness of the environmental management objectives and actions and to be able to respond to unforeseen events;
- 5.9. detail the Biodiversity Management Plan for Farm Elandskloof 168 (4365,68 ha), including any agreements (Stewardship agreements), appropriate zoning as well as implementation of the plan.
- 5.10. be included in all contract documentation for the construction phase of the development;
- 5.11. describe the level and type of competency required of the Environmental Control Officer, ("ECO");
- 5.12. define and allocate the roles and responsibilities of the ECO referred to above, and the Environmental Site Agent where applicable; and
- 5.13. determine the frequency of site visits.

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6. The holder of the authorisation must appoint a suitably experienced Environment Control Officer (or Site Agent where appropriate) for the construction phase of the development before commencement of any land clearing or construction activities to ensure that the mitigation/rehabilitation measures and recommendations referred to in this authorisation are implemented and to ensure compliance with the provisions of the EMP.

7. The holder of the authorisation must submit an Environmental Audit Report, ("audit report") to this Directorate (six months) after construction has been completed and also one year after the commencement of operation

7.1. The audit report must indicate the date on which the construction was completed, and detail compliance with the conditions of this authorisation.

7.2. This Directorate may require remedial action should the audit report reflect that rehabilitation is inadequate.

7.3. If the audit report is not submitted, this Directorate may give 30 days written notice and may have such an audit undertaken at the expense of the applicant and may authorise any person to take such measures necessary for this purpose.

8. The applicant must, in writing, within 10 (ten) calendar days of receiving notice of the Department's decision -

8.1. notify all registered interested and affected parties of the decision and the reasons for the decision; and -

8.2. specify the date on which the authorisation was issued;

8.3. inform all registered interested and affected parties of the appeal procedure provided for in Chapter 7 of the regulations; and

8.4. advise all registered interested and affected parties that should they wish to appeal that they must lodge a notice of intention to appeal with the Minister, within 10 days of receiving notice of the Department's decision and, must submit their appeal within 30 days of the lodging of their notice of intention to appeal, by means of one of the following methods:

By post: Western Cape Ministry for Local Government, Environmental Affairs and Development Planning, Private Bag X9186, Cape Town, 8000

By facsimile: (021) 483 4174; or

By hand: 1102 Utilitas Building, For Attention: Mr Jaap de Villiers, 1 Dorp Street, Cape Town, 8001

8.5. inform all registered interested and affected parties that a signed Appeal form obtainable from the Minister's office at tel (021) 483 3721 / 3195, email jedevill@pgwc.gov.za or URL <http://www.capegateway.gov.za/eadp>; must accompany the appeal.

8.6. inform all registered interested and affected parties that should they wish to appeal, the appellant must serve on the applicant a copy of the notice of intention to appeal as well as a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.

8.7. If the applicant should decide to appeal, the applicant must -

8.7.1.1. lodge a notice of intention to appeal with the Minister, within 10 days of receiving notice of this decision and,

8.7.1.2. serve a copy of the notice of intention to appeal on all registered interested and affected parties as well as a notice indicating where and for what period the appeal submission will be available for inspection and,

8.7.1.3. submit the appeal within 30 days of the lodging of the notice of intention to appeal.

9. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his behalf, including but not limited to, an agent, sub-contractor, employee or any person rendering a service to the holder of the authorisation.

10. Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.

11. The holder of the authorisation must notify this Directorate and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhered to.

12. A copy of this authorisation must be kept at the property where the activity(ies) will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.

13. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant

14. Non-compliance with a condition of this authorisation may result in the withdrawal of the authorisation and may render the holder liable for criminal prosecution.

15. This Department must be notified, within 30 days thereof, of any change of ownership and/or project developer. A request for the transfer of the rights and obligations contained in this environmental authorisation must be submitted in the following way:

15.1. The current holder of the environmental authorisation must submit an original signed letter to the Department stating that he/she wish the rights and obligations contained in this environmental

authorisation to be transferred, provide the Department with (a) confirmation that the environmental authorisation is still in force (i.e. validity period have not yet expired or the activity(ies) was lawfully commenced with), (b) the contact details of the person to whom the rights and obligations are to be transferred, and (c) the reasons for the requested transfer.

15.2. The person to whom the rights and obligations are to be transferred must also submit an original signed letter to the Department (a) accepting the rights and obligations contained in this environmental authorisation and (b) must indicate that he/she has the ability to implement the mitigation measures and to comply with the conditions of authorisation.

If the transfer is found to be appropriate by the Department, the Department will issue a letter confirming the transfer of the rights and obligations contained in this environmental authorisation.

16. Departmental officials shall be given access to the property referred to in B above for the purpose of assessing and/or monitoring compliance with the conditions contained in this environmental authorisation, at all reasonable times.

17. The activity which is authorised may only be carried out at the property indicated above.

18. Notwithstanding this authorisation, the holder of the authorisation must still comply with any other statutory requirements that may be applicable to the undertaking of the activity.

19. This activity must commence within a period of 3 years from the date of issue of this EA. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.