



Version 2.0

## OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PROGRAMME

Regulation 24 (n) of Government Notice No. R385 in terms of Chapter 5 of the National Environmental Management Act, 1998 (Act 107 of 1998), July 2006 and the Environmental Impact Assessment Regulations 2014 as amended

**For the proposed**

**WELGELEGEN ESTATE  
ON A SECTION OF THE REMAINDER OF PORTION 1 OF PORTION 279 OF KRAAIBOSCH 195  
AND PORTION 2 OF ZWARTE RIVIER 194  
GEORGE**



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July 2018

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**OPERATIONAL PHASE  
ENVIRONMENTAL MANAGEMENT PROGRAMME  
WELGELEGEN ESTATE, GEORGE**

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# 1 INTRODUCTION

HillLand Environmental were appointed by Reigate Development Projects (PTY) Ltd, to revise the draft Operational Phase Environmental Management Programme (OEMPr) for the Estate as required by condition 12 of the record of decision (ROD) EG 12/2/1-AG3 – Farm Kraaibosch 195/1 and 279, George, issued by the Department of Environmental Affairs and Development Planning (DEADP). This EMP takes the following Environmental Authorisations (EA) in consideration: ROD EG 12/2/1-AG3 – Farm Kraaibosch 195/1 and 279, George (30 April 2007); EA 16/3/1/5/D2/19/0015/14 (27 January 2018) and EA 16/3/3/5/D2/20/0001/18 (3 April 2018). The aims of this OEMPr are to address all environmental issues applicable during the long term operation of the estate. This includes, but is not limited to:

- Long term alien vegetation management
- Building control for individual houses
- Open space management
- Rehabilitation of the river system
- Long term environmental monitoring programs

The **CEMP** (Ref: GEO06/332B/78) has been approved by DEADP as per condition 12 of the ROD.

All property owners of the Welgelegen Estate as well as contractors working on the estate are bound by the OEMPr for the estate (in terms of both the construction and operational phases).

## 1.1 DESCRIPTION OF ESTATE

Welgelegen Estate is located to the South-east of the Kraaibosch Manor and borders to the existing historic sawmill on its south-western boundary. The proposed N2 extension runs south of the property border.

The estate is owned by Reigate Development Projects (PTY) Ltd, and consists of a total of single residential erven and amended to include group housing for retirement that vary in size up to 2000m<sup>2</sup> to be developed and sold to individual homeowners. There are linking private open space areas along the river corridor for recreational and conservation purposes and within the estate for recreational purposes.

The Modderrug River forms the northern boundary of Welgelegen Estate and forms part of the River Rehabilitation Programme and Invasive Alien Control Plan that is currently ongoing. All alien plants and trees have been eradicated from the system during the construction phase of the development, however invasive aliens are to be controlled and monitored on an ongoing basis as stipulated in the Invasive Alien Control Plan in terms of NEMBA. It is the intention to recreate a natural fauna, flora and riparian system as far as possible. Rehabilitation commenced during the construction phase with the bulk of the rehabilitation to continue into the operational life of the estate.

## **1.2 DEFINITIONS OF TERMS USED**

Various non-layman terms are used to describe activities in this report. Some definitions of terms used are provided below, along with their abbreviations.

### **Department of Environmental Affairs and Development Planning (DEADP)**

Governmental department responsible for over- seeing developments in terms of their environmental impact, thereby keeping the impact to a minimum.

### **Environmental Control Officer (ECO)**

A duly appointed environmental practitioner who will monitor compliance with the EMP, EA and rezoning conditions and who reports to the ELC.

### **Environmental Impact Assessment (EIA)**

A study done prior to approval of the development in order to determine the impacts that the development as well as possible alternatives may have on the environment of the site.

### **Environmental Impact Report (EIR)**

A report arising from the EIA, it shows and discusses the results obtained during the EIA.

### **Environmental Liaison Committee (ELC)**

A committee appointed in terms of the ROD, who meets as required for the life of the project to ensure continual compliance with the ROD, EMP and other documents pertaining to the management of the Estate.

### **Operational Environmental Management Programme (OEMPr)**

A plan (designed by the ECO and approved by the DEADP) that provides rules, regulations, recommendations and guidelines on how to manage all

operational management activities on the Estate in such a way that they can be considered environmentally friendly with a minimal environmental impact.

### **Estate management**

Those person(s)/department(s) responsible for the overall management of Welgelegen Estate.

### **Home Owners Association (HOA)**

An association formed by the residents of Welgelegen Estate along with Estate management. It is responsible for ensuring residents comply with the OEMPr, ECO instructions, residential rules and regulations, as well as handling residential complaints and requests. The HOA acts as a liaison between the residents and Estate management.

### **Welgelegen Architectural Review Committee (WARC)**

A committee comprising of person(s) from the estate management, design centre and landscaping responsible for overseeing all building activities conducted on Welgelegen Estate.

### **Record of Decision (ROD)**

Provided by DEADP to the developer, this is the Environmental Authorisation in terms of which the development has been approved.

### **Environmental Authorisation (EA)**

Provided by DEADP to the developer in approval of the development.

## **1.3 USING THIS DOCUMENT**

All residents/landowners, Estate management, permanent or part-time employees including contractors and others staying, working or visiting Welgelegen Estate **MUST ADHERE** to this OEMPr. All should be provided with a copy of this report, and if it is not possible to supply them with a copy, they must be informed of the contents and given access to the report.

The OEMPr must be taken into consideration for all activities on the Estate. The report has been divided into various sections, each dealing with a different “main” management activity (i.e. management of developed areas, management of open areas and monitoring). However as the environment is a complex system, and what happens in one area effects another it is recommended that every person understands the full scope of the OEMPr prior to carrying out an activity.

Within the document are rules and regulations that **MUST** be adhered to, as well as recommendations and guidelines that should be adhered to.

Recommendations and guidelines should be followed unless more environmentally friendly approaches are identified and used to replace those recommended.

The Estate Management in consultation with the ECO and ELC are responsible for approving the method prior to it being implemented. It is suggested that the WARC, ECO, ELC and other appropriate persons remain in touch with up-to-date methods of environmentally friendly practices as to implement these in combination with what has been discussed in this report.

## 2 CONDITIONS OF AUTHORISATION AND RECOMMENDATIONS AS STATED IN THE RECORD OF DECISION (ROD)

### 2.1 CONDITIONS OF AUTHORISATION

Number	Condition	Notes
1	The site preparation and activity may not commence before the statutory thirty day appeal period expires. In the case of an appeal submitted to the competent authority, the effect of the ROD will be suspended until the appeal is decided.	Done
2	One weeks' notice, in writing, must be given to the Directorate: Integrated Environmental Management (Region A), before commencement of construction activities.	
2.1	Such notice shall make clear reference to the site location details and reference number given in the ROD.	Done
2.2	The said notice must also include proof of compliance with the following conditions described in the ROD: Conditions: 1, 8, 10, 11, 12 & 13	Done
3	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, and;	Done, the estate supports the municipal recycling projects



3.1	Any solid waste must be disposed of at a landfill licensed in terms of section 20 of the Environmental Conservation Act.	Done, Municipal collection and disposal
3.2	Refuse and disposal thereof must be incorporated into the George Municipality refuse removal and disposal system.	Done
<b>4</b>	The applicant must comply with the following requirements of the South African National Roads Agency Limited (SANRAL):	
4.1	Provision should be made for a 10 metre building restriction measured from the N2 Road reserve boundary;	Done
4.2	A 2 metre high brick wall or security fence must be erected on the boundary of the property at the N2 reserve; and	Done
4.3	All future services, including the routing of storm water need to be accommodated outside the N2 reserve.	Done
<b>5</b>	No contamination of ground or surface water is permitted.	Ongoing – water testing after suspected spills from municipal sewage system and reporting for correction
<b>6</b>	Disturbance to the surrounding area must be minimised through the following measures:	
6.1	The construction site must be demarcated before the construction phases commences.	Done and Ongoing (around each home site during construction)
6.2	Access to the site must be obtained by making use of existing roads.	Ongoing
6.3	Vehicles must be restricted to clearly demarcated access routes.	Ongoing
6.4	All activities (storage and off-loading of material, construction and installation) must be restricted to the demarcated area to minimise any potential disturbance to the surrounding area.	Ongoing
6.5	Only construction and maintenance personnel must have access to the site.	Ongoing
6.6	No fires must be permitted on the site.	Ongoing in terms of fire outside property boundaries
6.7	No concrete or cement mixing must take place on the soil or grass surfaces. Cement mixers must be placed in suitable trays to prevent spillage onto the soil surface.	Ongoing

6.8	Noise generation should be kept to a minimum and construction activities should be confined to normal working hours (08h00 to 17h00 on weekdays).	Ongoing
7	No development must take place on slopes $\geq 1:4$ .	Ongoing
8	Provision should be made for a buffer area of 40 metres from the edge of rivers, streams or wetlands on site to maintain the functioning of ecological processes.	Done and Ongoing
9	The applicant must ensure that the development strictly complies with the provisions of the Stormwater Management Plan, dated 12 February 2007, compiled by Kantey & Timpler (Pty) Ltd.	Ongoing
10	The applicant must develop a water demand management plan for the activity to minimise water use within the proposed development. The plan must be submitted to the Directorate for approval prior to construction commencing. Such a plan must incorporate the George Municipality water demand management strategy as well as to address the following:	Done, Approved
10.1	Guidelines for water saving measures (e.g. at service infrastructure and residential level).	Done
10.2	The design and installation of water saving measures, devices and landscaping and architectural design.	Done
10.3	Timeframes for the implementation of the plan.	Ongoing
11	The applicant must appoint a suitably experienced Environmental Control Officer (ECO) before commencement of any land clearing or construction activities to ensure that the mitigation / rehabilitation measures and recommendations referred to in this ROD are implemented and to assure compliance with the provisions of the construction phase EMP.	Done
12	The applicant must compile and submit an acceptable construction phase EMP, for the installation of the services, roads, residential units, rehabilitation of the disturbed areas and the management of the development (open spaces) during operation to the Directorate. The EMP must	Done and Approved
12.1	Be submitted to the Directorate at least three weeks prior to construction activities commencing. This must be approved prior to any land clearing and construction commencing	Done
12.2	Describe the level and type of competency required of the ECO;	Done
12.3	Define and allocate the roles and responsibilities of the ECO referred to above, and the Environmental Site Agent where applicable;	Done
12.4	Determine the frequency of site visits;	Done

12.5	Be included in all contract documentation for the construction phase of the development.	Done
12.6	The EMP must address storm water management during construction and after construction.	Done
12.7	The EMP must address the need for establishment of an Environmental Liaison Committee (ELC).	Done
<b>13</b>	The applicant must, within five calendar days of the date of issue of the ROD:	Done
<b>14</b>	The ROD does not provide authorisation for any outdoor advertising and must therefore be obtained from the relevant authorising authority. All outdoor advertising associated with this activity that is not listed under GN 386 of 21 April 2006, whether on or off the property concerned, must comply with the South African Manual for Outdoor Advertising Control (SAMOAC)	Approvals obtained as necessary
<b>15</b>	The applicant shall be responsible for ensuring compliance with the conditions contained in the ROD by any person acting on his behalf, including but not limited to, an agent, servant, employee or any person rendering a service to the applicant in respect of the activity, including, but not limited to contractors and consultants.	Done and Ongoing
<b>16</b>	The owner and / or developer must notify the Directorate and any other relevant authority, in writing, within 24 hours thereof if any condition of the authorisation is not adhered to.	Done and Ongoing
<b>17</b>	Departmental officials shall be given access to the property concerned for the purpose of assessing and / or monitoring compliance with the conditions contained in the ROD, at all reasonable times.	Done and Ongoing

## **2.2 RECOMMENDATIONS IN THE AUTHORISATION**

The following are recommendation made by the local authority towards the estate:

- The area can be rehabilitated by the planting of indigenous plant species on the disturbed areas.
- Indigenous vegetation can also be used in landscaping and open areas. Local indigenous vegetation should be used rather than exotic grass species.
- The development layout should promote the development of green corridors and public access thereto (e.g. walks, bicycle trails).

## **3 THE ENVIRONMENTAL CONTROL OFFICER**

As per condition 11 of the ROD a suitably qualified Environmental Control Officer (ECO) was appointed throughout the construction phase of the development. It also requested that the ECO should then assist throughout the life of the project, as to ensure that the estate is continually managed on an environmentally friendly basis.

A remuneration schedule should be discussed through the Home Owners Association (HOA). The ECO is to be represented on the HOA trustee committee and will hold a veto right in relation to environmental issues.

The ECO's terms of reference are as follows:

- To ensure compliance with the OEMPr, ROD, EA and any other conditions which may be imposed from time to time in relation to environmental matters
- To assist homeowners regarding environmental considerations pertaining to construction of residences and associated structures
- To report to the ELC as may be required for the lifespan of the project.
- To call emergency meetings of the ELC as and when the need arises.

## **4 ENVIRONMENTAL LIAISON COMMITTEE**

ELC terms of reference:

- Committee comprising of the ECO, developers representative (replaced by a HOA representatives after the development period), Local authority representative, DEADP representative, Environmental NGO representatives
- To make decisions relating to minor amendments and modifications to the development as a result of operations (not where such changes would result in the definition of an “upgrade” or amendment of the ROD – in such circumstances an amendment in terms of NEMA would be required.
- Ensure compliance with any relevant legislation.

## **5 MANAGEMENT OF DEVELOPED AREAS**

Developed areas include:

- single residential and group housing erven to be developed and sold to individual home owners.
- Infrastructure associated with the development, including internal roads, pump stations and underground sewerage pipelines (to be maintained by the municipality), as well as underground electricity cables.

### **5.1 CONSTRUCTION ACTIVITIES**

The residential houses and associated structures are to be continually developed during the operational life of the estate and are therefore discussed in this OEMPr.

Any development (which has been approved and recorded in the ROD or EA) that is to take place during the operational life of the estate is to follow the guidelines discussed below.

These specific guidelines have been set to ensure that environmental disturbance is limited both during civil and home construction.

No construction may be allowed unless the following guidelines have been taken into consideration:

### **5.1.1 Persons responsible for overseeing construction**

The management of construction activities during the operational phase will be the responsibility of the **Welgelegen Architectural Review Committee** (WARC) or their site representative.

### **5.1.2 When would an Environmental Impact Report be required?**

As an Environmental Impact Assessment (EIA) has been done prior to the development, certain development of infrastructure (i.e. residential units) has therefore been approved in the ROD and EA on the basis of the environmental impact report (EIR). There is no need for future EIRs to be done prior to construction of residences and other infrastructure not erected during the construction phase of the Welgelegen Estate. This is unless the proposed development or activity did not previously form part of the ROD or EA and now constitutes a listed activity (as may be amended from time to time).

### **5.1.3 Submitting a “building plan”**

Landowners (those wishing to build) must compile and submit plans in accordance with the estate guidelines.

This plan must be approved by the WARC prior to any construction (including extensions made on any existing infrastructure) can take place.

This proposal must include:

- Building plan –  
Compliance with the estate guidelines
- Environmental plan –  
Demarcation of building footprint, plant rescue, and construction site plan indicating areas for stockpiling of topsoil, storage of materials, positions of silt fences and other erosion control mechanisms as well as a plant rescue program. The building footprint is the area within which any physical disturbance must be contained. Physical disturbance includes the building of a house, pool and deck etc.

The environmental plans are to be signed off by the ECO.

- Landscaping plan –  
This plan must include the plant species to be planted after construction from the approved plant list.

The landscaping plans are to be signed off by the ECO.

#### **5.1.4 Pre-construction**

No construction of residences may take place prior to approval by the WARC and ECO respectively.

It is essential that plant rescue be done prior to any construction taking place. Plant rescue entails the physical transplanting of suitable indigenous material from the property to a temporary nursery or directly into the fynbos areas or open space areas. Construction can only go ahead (assuming all other requirements have been met) once the ECO or a designated appointee has approved the plant rescue conducted.

The building area is to be physically screened off with suitable barrier which includes silt / erosion controls where required. These are to be kept clean during construction to prevent any movement of silt or construction material out of the demarcated zone.

#### **5.1.5 Construction phase**

The road verge is defined as the area between the building footprint and street. It may be used during construction for activities such as storage of building material and "non-hazardous" waste, and must be managed according to the specifications set out for the building footprint (as mentioned above) during construction (i.e. plant rescue, topsoil rescue and screening requirements).

#### **5.1.6 Post construction**

This area is to be reinstated after completion of construction to natural vegetation from the approved plant list. Landscaping of the sidewalks is permitted but only once a landscaping plan has been submitted and signed off by the ECO or a designated appointee.

#### **5.1.7 Record keeping**

A record of all decisions and progress regarding the construction must be kept on file. This is to make allowance for any problems in future, or to be used as a reference for similar developments situations.

**NO work to commence on any building site prior to:**

- The Building plans, environmental plans and landscaping plans are approved
- Full demarcation of the property boundary / development area with a shade netting boundary fence to prevent any access outside the property boundary and to contain the building activities to the site. This must be inspected by the ECO and WARC.
- Approval by the ECO regarding topsoil and plant rescue.

Impact Management Outcomes	Impact Management Actions	Method of monitoring the Actions	Person responsible	timeframe
Building control for homes	To control builders on site	Environmental induction and checklist prior to commencement with weekly site inspections	ECO	Throughout the build of each home

## 5.2 RESIDENTIAL AREAS

### 5.2.1 Residential rules and regulations

Homeowners are to ensure that they adhere to the following:

- Landscaping and integrating the natural vegetation with your home is a critical aspect of life at Welgelegen. In view of this, landscaping guidelines have been established together with a plant list of the indigenous vegetation that is suitable for use on the estate. (Annexure XX)
- Follow the requirements as provided above when constructing on property.
- Waste management is to be done in accordance to Section 5.2.4 of this OEMPr.
- Internal fencing in order to control domestic animals can be erected within the building envelope, according to the building guidelines.



### **5.2.2 Planting and maintaining of gardens**

Gardens on the estate include those on individual plots as well as on and around associated structures. The following recommendations apply in all instances:

#### Species to be planted

The garden area must make use of 100% locally indigenous vegetation from the approved list (as amended from time to time).

Formal landscaping should merge with the surrounding conservation i.e. no defined sharp boundaries. Fencing within the building envelope should be softened with the planting of indigenous vegetation on the inside and outside.

#### Conserving water in the garden

The plant species on the list are mainly locally indigenous plants that are adapted to the local climate and should not require excessive watering in addition to the natural rainfall pattern. However, plant selection will not be enough to conserve water and homeowners should therefore adopt a water-wise-use ethic to assist in conserving water. Methods must also be put in place to reduce nutrient runoff, which may serve to contaminate water.

The following water-wise principles for private gardens are recommended:

- **Watering**

The collection of roof water is mandatory for watering gardens

### **5.2.4 Waste Management**

The estate's refuse is collected by the local authority – please comply with their collection requirements.

No waste may be disposed of in the open space areas, or anywhere else if not designated as a waste disposal area. All waste must be disposed of in appropriate municipal or other authorised dumping sites.

Dumping of garden refuse on any part of the estate is not permitted.

### **5.2.5 Domestic Animals**

The keeping of wild animals (e.g. monkeys, reptiles and birds) is not recommended on the estate.

NO ANIMAL that could threaten biodiversity of the estate is recommended. Such species include certain alien fish species, bird species and reptile species. Homeowners wishing to keep alien or indigenous species must abide to the rules and regulations set of CapeNature as well as other regulations controlling the keeping of animals as pets. It is the responsibility of the homeowner to ensure that they are familiar with the details pertaining to pets they wish to keep. This can be either found out from the ECO or Cape Nature.

Animals must be properly enclosed to prevent escape. It is advised that Cats, which are more difficult than other animals to restrain, should be neutered/spayed to prevent breeding with feral cats and consequent increase in numbers within the natural environment.

Owners wishing to take their pets for walks (or any other reason) into the rest of the developed area or open space areas must do so only in areas where these pets are allowed. Within these areas the animal must be kept under control (e.g. birds and reptiles kept in a container, dogs and monkeys on a leash)

Wildlife on the Estate should remain with as little human interference as possible. Feeding of wild animals in close proximity to humans could result in habituation to humans.

### **5.2.6 Animal control**

Various animals including snakes, monkeys, baboons and bats may enter residential areas. The landowners may choose to remove such animals from their property by contacting CapeNature the estate manager or the ECO. NO animal may be killed, and owners can be fined for killing an animal.

PLEASE NOTE that most people are bitten by snakes when attempting to kill the animal or play with it.

Also remember that one very often needs to get closer to an animal to kill it than to catch it. Catching animals is relatively simple. For example broom sticks can be used to gently persuade a snake into an empty container such as a bucket.

A lid can then be placed in the bucket and the snake safely transported to where it can be released – when in doubt, call for assistance.

### 5.2.7 Fire protection

Open space areas, especially those areas dominated by fynbos, have a high risk of fires, particularly during the dry summer months and periods of high wind velocities thus NO burning of waste on ANY PART of the Estate is permitted.

- A fire place may be built within the building envelope.
- Braais, webers and other forms or portable braais are allowed ONLY in this zone.
- Coals (old or new) may not be disposed of in the surrounding natural area (open spaces).
- The fire must be properly extinguished before being left unattended.
- Wood for the fire may not be collected from the open spaces of the estate.

<b>Impact Management Outcomes</b>	<b>Impact Management Actions</b>	<b>Method of monitoring the Actions</b>	<b>Person responsible</b>	<b>timeframe</b>
Residential rules and regulations	Ensure all residents receive and understand this OEMPr	Sign a register to show owner received the OEMPr	HOA Each home owner	Entire lifespan of Estate
Planting and maintaining of gardens	Monitor residents gardens and watering method	Weekly/monthly checklist to monitor compliance with OEMPr and compliance report	ECO to monitor with checklist	On a monthly basis for the lifespan of the estate
Waste management	Monitor residents compliance with waste disposal	Weekly/monthly checklist to monitor compliance with OEMPr and compliance report	ECO to monitor with checklist	On a monthly basis for the lifespan of the estate
Domestic animals	Monitor residents compliance with domestic animals	Weekly/monthly checklist to monitor compliance with OEMPr and compliance report	ECO to monitor with checklist	On a monthly basis for the lifespan of the estate
Animal Control	Monitor residents and staff compliance	Weekly/monthly checklist to monitor compliance with OEMPr and compliance report, monitor open spaces for snares	ECO to monitor with checklist HOA	On a monthly basis for the lifespan of the estate
Fire protection	Monitor residents and staff compliance	Weekly/monthly checklist to monitor compliance with OEMPr and compliance report	ECO to monitor with checklist HOA	On a monthly basis for the

				lifespan of the estate
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### 5.3 ESTATE INFRASTRUCTURE

Estate infrastructure refers to roads, pipelines, services, fences and any other infrastructure that may be required from time to time. Any infrastructure within the open space areas along the river (within the 40m buffer) need to take environmental management into account first and may require ECO or DEADP approval prior to being implemented.

#### 5.3.1 Construction of infrastructure and modification of the Estate

No modifications to the final Estate infrastructure (after construction) are allowed without the consent of the ECO. Please note that major modifications may require approval by DEADP.

#### 5.3.2 Maintenance of infrastructure

It is vital for the Estate, along with its associated infrastructure (pump house, pipelines and roads), to be continuously maintained. This entails irrigation, trimming of landscaped areas as well as maintaining associated infrastructure. A maintenance program, capable of spanning the life of the estate, must be developed and implemented. It is the responsibility of the WARC to ensure that this program is implemented within the first year of the OEMPr coming into effect. It is also their duty to ensure the program is continuously adapted (in an environmentally friendly manner) as new maintenance methods arise. Services like sewage that are handed over to the municipality will also require maintenance and will need to comply with the CEMP and OEMPr.

#### 5.3.3 Water management

While potable water is to be supplied by the local authority, irrigation water will be supplemented from rainwater harvesting at each erf. Water saving measures such as mandatory rainwater tanks for each individual unit and appropriate landscape guidelines with specific plant species to be considered, will assist in water management. Water saving measures will be mandatory as part of the design of the reticulation network. Rainfall storage and irrigation has been agreed upon.

### 5.3.4 Waste Management

All refuse must be disposed of only in the receptacles provided for such use and these must remain sealed in order to prevent access by wildlife, such as vervet monkeys and baboons, resulting in them becoming a problem.

No waste may be disposed of in the open space areas, or anywhere else if not designated as a waste disposal area. All waste must be disposed of in appropriate municipal or other authorised dumping sites.

Impact Management Outcomes	Impact Management Actions	Method of monitoring the Actions	Person responsible	Timeframe
Construction of infrastructure	Monitor Estate and residents compliance	Weekly/monthly checklist to monitor compliance with OEMPr and report on compliance	ECO HOA	Entire lifespan of Estate
Maintenance of infrastructure	Monitor Estate and residents compliance	Weekly/monthly checklist to monitor compliance with OEMPr and report on compliance	HOA	Entire lifespan of Estate
Water management	Monitor Estate and residents compliance	Weekly/monthly checklist to monitor compliance with OEMPr and report on compliance Ensure water not abstracted from the river	HOA ECO	Entire lifespan of Estate
Waste Management	Monitor Estate and residents compliance	Weekly/monthly checklist to monitor compliance with OEMPr and report on compliance. Ensure no waste in open areas	HOA ECO	Entire lifespan of Estate

## 6 MANAGEMENT OF OPEN SPACE AREAS

The open space areas of the estate are subject to an intensive conservation and rehabilitation programme. The main emphasis is on restoring the ecological integrity of the property for the benefit and enjoyment of all the residents and to the long term benefit of the natural biodiversity of the area. The following guidelines have been set up in order to achieve this.

PLEASE NOTE that **no formal landscaping** is permissible within the open space areas.

## 6.1 PROTECTION OF BUFFER AREA

Within the open space areas there is to be a buffer area subject to stricter conservation measures than in comparison to other open space areas. The buffer area incorporates the river courses and associated riparian vegetation.

In brief, a minimum setback line of 40m must be maintained along the Modderrug River. No earthworks are allowed within the buffer area, and no permanent structures (other than a footpath and the security fence as approved).

It is not essential for the boundary of the buffer area to be demarcated as long as it can be correctly identified by using various landmarks. It is important for the boundary to be correctly identified to ensure compliance with the ROD, OEMPr and various other documents pertaining to the management of the buffer area.

No burning is allowed within the buffer area. Material that may need to be burnt must be removed from the buffer area and burnt in a designated area on or off of the estate. The necessary burning permits must be arranged by the WARC. The site for the burn must be decided on by the WARC and approved by the ECO. If burning is to take place off of the estate, the WARC is responsible for obtaining the necessary permission. Burning should only be done on days that are suitable for SAFE burning (e.g. possibilities of the fire becoming out of control are at a minimum). It is suggested that the WARC contact the Fire Control offices to enquire about the fire index rating for the day and to determine whether it is safe to burn and obtain a burning permit.

Impact Management Outcomes	Impact Management Actions	Method of monitoring the Actions	Person responsible	timeframe
Protection of buffer area	Regular monitoring of open spaces	Compliance checklist to be completed by ECO on a monthly basis and report on compliance HOA to do regular inspection	ECO HOA	Throughout the build of each home in the estate

## 6.2 MANAGEMENT OF FOOTPATHS AND OTHER TRAILS

According to the recommendations of the ROD the development should promote green corridors and public access thereto (e.g. walks, bicycle trails). These pathways/trails must be designed in such a way that they prevent any

degradation of the riparian and buffer zone along the river courses. Hiking trails (existing or new) need to be maintained regularly to prevent degradation.

### **6.2.1 User rules and regulations**

All users of the trails system in Welgelegen Estate must be made aware of the following rules and regulations to be adhered to if using the trails system. This can be done by placing a sign board (designed to ensure maximum visibility of the sign board, while simultaneously having a minimal visual impact) at all the entry points to the trail.

- No motorised vehicles (e.g. motorcycles, four wheelers, etc) are permitted on the trail system or elsewhere in the open space areas unless as part of the maintenance requirements.
- Mountain bikes will be allowed only on designated paths.
- Pedestrians ALWAYS have right of way.
- There may be no deviation off of the path for any reason, unless the path is damaged or is unusable for any reason. In such circumstances deviation must be kept to a minimum.
- Any damage discovered on the trails should be reported to the estate management who is responsible for the immediate rectification.
- Damaged trails must be closed to ensure that no deviation from paths is necessary.
- The purpose of the trails is for the enjoyment of the natural surroundings (fauna and flora); these must therefore not be disturbed.
- Nothing may be removed from the open space trails. "Take only photos, Leave only footprints".
- As the fire danger is very high due to the type of vegetation that naturally occurs, NO fires will be allowed and any smoking should be discouraged.
- Domestic animals must be on a leash and under control at all times.
- No littering will be tolerated. All refuse must be disposed of only in the receptacles provided for such use and these must remain sealed in order to prevent access to such areas by the wildlife (e.g. vervet monkeys) resulting in them becoming a problem..

#### Penalties for non-compliance

If possible, visitors not adhering to these regulations and rules may be penalized in the form of fines, or denial of future access depending on the severity of the offence. The WARC are required to weight the various offences and determine appropriate penalties. This must be recorded and used to fine offenders. Users

should be made aware (on the signboard) that they might be penalized if caught breaking any of the above rules and regulations.

### **6.2.2 Trail maintenance**

- A maintenance program should be in place to ensure the path remains in a usable condition and does not lose its appeal to walkers.
- Any repairs or the setting out of new trails must be done manually as machines will damage riparian vegetation.

<b>Impact Management Outcomes</b>	<b>Impact Management Actions</b>	<b>Method of monitoring the Actions</b>	<b>Person responsible</b>	<b>timeframe</b>
Management of footpaths and other trails	Monitoring of activities by regular site inspection/visit	ECO to do regular monitoring and completion of a checklist on a monthly basis	ECO to do checklist	Throughout the build of each home and lifespan of estate

## **6.3 GENERAL RULES FOR OPEN AREAS**

### **6.3.1 Modifications to the open space areas**

No modifications to the open space areas may be allowed without the consent of the ECO and should be reported to DEADP. This includes the rehabilitation plans, alien clearing plans, landscaping plans, trail layout or any other activities in the open space.

### **6.3.2 Waste management**

No dumping of garden or general refuse is allowed within the open areas. Users of the trail system must either take their refuse with them or dispose of it in the receptacles provided for such use.

### **6.3.3 Hunting**

No hunting is allowed. The Open space areas must be regularly monitored for poaching; any snares found must be removed.

### **6.3.4 Domestic animals**



No domestic animals are permitted into the open space areas unless they are on a leash. The responsibility falls on the owners to ensure that domestic pets do not enter into these nature areas of their own accord. Should any domestic animals become problems in the open space the estate management will be required to remove such animals from the estate. Owners will be penalized in the form of a fine, with repeat offenders being fined higher amounts and/or being denied the opportunity to keep pets on the Estate in future.

### 6.3.5 Motorised vehicles

No vehicles, with the exception of security personnel, are allowed within the open space areas unless with proper authorization from the ECO. Vehicles should access be granted must remain on designated routes.

### 6.3.6 Fires and wood collection

No fires are allowed within the open areas unless by order of the WARC, for reasons of controlling vegetation (e.g. fire is an essential element of the fynbos vegetation). In such an event the fire must be controlled and limited to a designated area (to be decided on by the WARC, with the approval of the ECO). As the riparian corridor is a rehabilitating forest / thicket habitat, fires are not required for vegetation management as is the case with fynbos habitat management.

The WARC are responsible for organising the necessary burning permits.

As the bulk of wood was removed during the construction phase, the remainder of the wood from subsequent follow-ups or dying / dead trees must be left on site.

<b>Impact Management Outcomes</b>	<b>Impact Management Actions</b>	<b>Method of monitoring the Actions</b>	<b>Person responsible</b>	<b>timeframe</b>
General rules for open areas	Monitor residents wanting to use the open spaces in the riparian zone. Other open areas require regular monitoring for snares, fires, waste and domestic animal behavior	HOA/Estate manager to monitor visitors to the open area in the riparian zone by monitoring access to the gate key (signing for the gate keys) other open areas require regular site inspections/visits	ECO to do checklist HOA/Estate Manager to control access to key and open space	Throughout the build of each home and lifespan of the estate

## 6.4 RIVER COURSES & RIPARIAN VEGETATION

### 6.4.1 Management of indigenous fauna and flora

Prior to the start of the development the area consisted of a high density alien vegetation with little indigenous flora. This alien vegetation was removed during the construction phase and rehabilitation process started. As part of this rehabilitation process many indigenous plants were replanted (some of which originate from the plant rescue done in the area during the construction phase). No animals have been re-introduced and are expected to gradually move back into the area on their own accord.

The riparian vegetation and river course is to be left to recover naturally. In other words, once all plants have been planted the vegetation is to not be “gardened” in any way. Intervention may only take place if rehabilitation appears to have failed. This must be done in consultation with the ECO.

### 6.4.2 Alien plant and animal control

Initial invasive alien plant clearing was carried out during the construction phase of the Estate. However, continuous follow up will be required throughout the operational life of the Estate to prevent re-infestation, this is monitored and controlled through the implementation of the Invasive Alien Plant Control Plan in terms of National Environmental Management: Biodiversity Act (NEM:BA Act No 10 of 2004, Amended October 2014) (see Section 7 & Annexure XX). This is a management activity that will be required both within the development and open space areas of the Estate.

This section will now be replaced by the Control Plan submitted in accordance with NEM:BA Alien Species Regulations (see Appendix .....). It is important to note that the Estate has been compliant with the requirements to clear alien vegetation since the issue of the Environmental Authorisation in 2006

No alien fish species were found to be in the river system. These should not be introduced as they may prey on indigenous species. Should alien fish species be found to be present at some later stage these should then be removed in agreement with the ECO. An appropriate removal method, which is not harmful to the indigenous fish, will have to be decided on and implemented by the WARC/ECO.

Alien vertebrates and bird species are not seen as a major problem at present and thus control is thus not deemed essential. The WARC/HOA should remain aware of future changes in alien fauna and their control; this should then be added to this OEMPr.

### **6.4.3 Modification of stream and river bed**

Physical modification and erosion repair to the river has been authorized in terms of the Modderrug River Rehabilitation Plan and has its own Environmental Authorisation. Any physical work within the river system must be in terms of that EA, or failing that will be subject to a new Environmental Impact Assessment process and EA.

### **6.4.4 River maintenance**

The most fundamental principle that has to apply to any river maintenance work is that everything should be done in a conservative and environmentally friendly way. Because all rivers differ in terms of their ecological importance or conservation status, the precautionary principle should guide all maintenance work due to the fact that, in most cases we do not have enough information available when we need to make the decisions.

The following are the suggested precautionary principles:

- Protection of riverbanks and riverbed

Whenever possible, maintenance activities should be planned to avoid unnecessary disturbance to the banks and/or bed of the river. Alterations to the riverbed and riverbanks destroy crucial habitats for aquatic organisms.

- Manual labour

Manual labour should always be considered first for river maintenance activities. Mechanical methods should be a last resort, to ensure that damage is minimised.

- Modifying only one bank

Whenever possible only one riverbank should be disturbed during maintenance activities. The most valuable areas (biophysical or aesthetic) should be maintained. Unmodified areas act as a reserve from which plants and animals re-colonise disturbed areas. Hydraulic considerations should determine the side to be modified (e.g. it may be desirable to modify the inside of a bend and preserve the vegetation on the outside for bank stability).

- Time to undertake activity

Maintenance activities in rivers could lead to significant damage if interrupted by high flows or floods, rather undertake activities during the dry summer season. The ECO should be consulted with regard to the most appropriate times for disturbance to riparian vegetation and aquatic organisms.

- Erosion/Sediment control

All reasonable measures should be undertaken to ensure that erosion does not occur as a result of the river maintenance activities. Sedimentation can be minimised by more sensitive maintenance techniques such as: temporary silt traps, limiting disruption to the river bed and banks, reducing the excavation and the length of work, timing outside of the rainy season and leaving vegetated sections intact.

- Access

Whenever possible existing access routes to the river should be used, otherwise only one route should be used per site. The following guidelines are provided:

- > use the most degraded areas for access routes
  - > keep erosion potential and aesthetics in mind
  - > limit disturbance to the riverbank and riverbed as far as possible
  - > access routes must be rehabilitated
- Pollution of any sort should be prevented

All potential pollutants should be kept away from rivers. Machinery should be checked for oil and fuel leaks, or possible soil and water contamination both prior to and during river maintenance activities.
  - Spoil material

No spoil material should be placed on the river banks, dumped on riparian or bank habitats, spread around trees, used to fill hollows and other irregularities in the floodplain, or be used for erosion control and MUST be removed to an approved dumping sites.

- Channelization or canalisation

It is never advised to channelize water to solve river maintenance problems, since the problems created by channelization are in all cases worse than those originally anticipated.

- Flow of the river

Rivers will never follow the shortest route and riverbeds are never smooth. The straightening of rivers channels and smoothing of riverbeds are not natural and must be avoided at all times. In both cases the potential to cause more harm exists. Meanders in rivers reduce the flow speed of the water and spread it over a wider area in the floodplain, thereby reducing flood risk and damage.

- Eradication of alien vegetation

Alien clearing has taken place during the construction phase, and is an ongoing activity being addressed in the Invasive Alien Plant Control Plan. No large plant material, generated as a result of follow-up should be left in the riverbed or riverbank. The material could clog-up and cause major damage to properties or the aquatic environment downstream. This material should be moved to above the 1-50 year flood line by hand only (no vehicles may have access to the site).

<b>Impact Management Outcomes</b>	<b>Impact Management Actions</b>	<b>Method of monitoring the Actions</b>	<b>Person responsible</b>	<b>timeframe</b>
Management of indigenous fauna and flora	Removal of alien vegetation and introducing indigenous vegetation (no formal landscaping in open areas)	Monitoring of open areas to prevent formal landscaping. Removal of alien vegetation is an ongoing activity to be monitored and controlled	HOA to do regular alien clearing with IAP to be implemented ECO to do monitoring with checklist	Throughout the build of each home and lifespan of the estate
Alien plant and animal control	Removal of alien vegetation should	Monitoring of gardens and open spaces to control alien	HOA to ensure compliance	Throughout the build of

	be done ongoing.	vegetation with the help of the IAP, to be implemented.	with the IAP ECO to do regular inspections	each home and entire lifespan of the estate
Modification of streams and riverbed	Rehabilitation of the Modderrug River	Rehabilitation of the Modderrug River according to the Modderrug River Rehabilitation Plan approved by DEADP	HOA to ensure compliance with regulation and methods in the Modderrug River Rehabilitation Plan,	Ongoing for the entire life of the estate
River Maintenance	Monitoring and maintenance of the Modderrug River	Compliance with the Modderrug River Rehabilitation Plan to ensure river and riparian zone health increase	HOA to ensure compliance with Modderrug River Rehabilitation Plan	Ongoing for the entire life of the estate

## 6.5 REHABILITATION OF THE OPEN SPACE AREAS

The open space areas and riparian zone must be correctly rehabilitated to allow these zones to form an effective buffer between the residential area and river itself. This buffer would help remove nutrients and wastes arising from the residential area before they enter the river.

The river will be unable to contribute valuable services to the development such as river trails, bird watching and water purification. It is likely that without mitigation, and due to the close proximity of the river to George, the condition of rivers would be a continual problem to the HOA and residence of the Estate

It is the responsibility of the WARC to ensure rehabilitation of the open areas takes place. Rehabilitation started with the removal of alien trees during the construction phase, but must be continued until the area is successfully rehabilitated (e.g. climax vegetation is dominant, with stable ecological cycles and processes). However, once rehabilitation has been deemed successful, the area must still be maintained, conserved and monitored.

The rehabilitation of the riparian zone requires careful attention. The following is recommended to assist in making the rehabilitation process successful:

- Work on the riparian zone should proceed from the uppermost boundary where the river enters the property in a downstream direction.

- The river valley should be permanently cleared of all invasive alien plants as far as possible. The initial clearing has taken place during the construction phase, the invasive alien plant control plan will deal with follow-up clearing and monitoring for the operational life of the Estate.
- The river bed should not be mechanically interfered with (e.g. bull-dozing) as this section of the river should be allowed to recover naturally once all invasive alien trees along the river have been removed.
- Pockets of indigenous tree saplings (species typical to riparian zones in the George coastal plain) should be planted to assist in the recovery of this area. Saplings should be planted outside the flood zone of the river.
- The rehabilitated area must not be “gardened”. It should be left to recover naturally. If recovery does not occur, alternate plans must be made. This may entail the use of an outside consultant to assist in determining the problem and finding a suitable solution.
- Any infestation from upstream or the opposite bank should be taken up with the authorities in terms of existing legislation.
- Monitoring of the recovery of the river is essential otherwise it is impossible to quantify progress.

These recommendations should be adopted and implemented in conjunction with the Modderug River Environmental Management Plan to assist with the rehabilitation. The relevant authorities (DEADP, DAFF and CapeNature) are instrumental in promoting and managing South Africa's River Health Programme. This programme uses four indices to monitor the ecological health of our rivers, namely SASS (a macro-invertebrate index), FAll (a fish index), RVI (riparian vegetation index) and an index of habitat quality and quantity.

## **7 MONITORING PROGRAMS**

The main objective of this OEMPr is to ensure that all activities carried out on the Estate have a minimal NEGATIVE impact on the natural environment. This can be done through various monitoring programs designed for such a purpose.

The success of the monitoring programs will be determined by continuously monitoring the outcomes of these programs.

## **7.1 INVASIVE ALIEN PLANT CONTROL PLAN**

An Invasive alien plant control plan (IAP) in terms of National Environmental Management: Biodiversity Act (NEM:BA Act No 10 of 2004, Amended October 2014) is to be used to continuously monitor and control invasive alien plants in the estate, open spaces as well in the riparian zone (Annexure XX). The IAP clearly indicates which species should be eradicated with their preferred eradication method (Annexure XX).

The initial alien plant clearing has been done during the construction phase of the development, with follow-up having started and to continue THROUGHOUT the operational life of the estate. Monitoring re-growth of alien plants is an essential element of follow-up operations.

A quarterly assessment of the extent as well as the areas of alien plant re-growth must be undertaken. The results of this assessment should be used in modification of the Invasive Alien Plant Control Plant in order to prioritise areas for the next quarter.

All records of assessments and areas cleared should be maintained in a database in order to measure the success of the rehabilitation. A quantifiable figure (Cost/Area) should also be recorded.

## **7.2. MONITORING OF WATER QUALITY AND QUANTITY**

Continued water monitoring at the existing water monitoring sites as per the EIR should take place. Adopting the River Health Programme as a means of monitoring water quality is required. This programme is overseen by the relevant authorities in association with the provincial nature conservation department. It uses four indices to monitor the ecological health of our rivers, namely SASS (a macro-invertebrate index), FAll (a fish index), RVI (riparian vegetation index) and an index of habitat quality and quantity.



It is therefore essential that these four indices be incorporated into the monitoring programme of the Estate. All water monitoring activities should be carried out on the same day. This will allow for accurate comparison of results for each index. Monitoring should be carried out quarterly.

Monitoring of the water quality should take place with the above river health monitoring but should also take place whenever there is a suspected pollution event (normally a leaking sewer). Results must be sent to the municipality and any such leaks immediately reported and a register of such problems should be kept by the estate management.

*Table 2: Water nutrient and quality monitoring*

E. coli and Faecal coliforms
Potassium (K mg/l)
Conductivity (mS/N @25°C)
pH (@25°C)
Total Oxygen Demand (mg/l)

The results of all readings should be made available to all relevant authorities (i.e. DEADP, Department of Health, Local authority).

Should any imbalances or readings not be within the norm, the following steps should take place to rectify the problem:

- A professional consultant should be appointed to assess the situation.
- The origin of the problem must be determined
- The relevant Authorities should be informed of all problems even when not originating on the estate.
- If the problem originates on the estate, the cause must be determined.
- The cause of the problem (not only the result) must then be rectified at its origin in consultation with the professional consultant, ECO, ELC and the relevant authorities.
- Follow-up monitoring must then be adopted until the results have normalised.

### **7.3 MONITORING OF KIKUYU INVASION**

Where kikuyu invasion into the riparian corridor occurs, it should be treated with a foliar spray of a grass selective herbicide such as verdict or an alternative method of control will have to be sought.

Individual home owners should be encouraged to seek alternative species for lawns, for example Buffalo Grass.

## **7.4 MONITORING THE OEMPr**

The OEMPr must be continually monitored to determine its effectiveness and efficiency. The appointed ECO should conduct monthly monitoring according to a scoring checklist to ensure proper compliance with this OEMPr and report monthly on compliance. The monitoring checklist is a dynamic document and changes are to be made to ensure that the OEMPr is continually monitored (see [Annexure XX for an example of an operational phase monitoring checklist](#)).

In terms of home construction the build sites are monitored weekly (see [Annexure XX for an example of a construction monitoring checklist](#)).

### **7.4.1 Monitoring of activities dealt with in the OEMPr**

Section [6.1 to 6.3](#) pertains to monitoring programmes aimed at monitoring certain activities on the Estate. These are however not all that needs to be monitored. Records of all activities discussed in the OEMPr should be kept. These records should include any exceptions that may have been made (under permission of the ECO, WARC and appropriate authorities), problems that were experienced, methods used to rectify problems as well as the final outcome. This information can then be used to determine flaws in the OEMPr. These flaws would be guidelines or recommendations that are ineffective and inefficient. They would then need to be removed or changed/adapted until they are effective and efficient.

### **7.4.2 Monitoring compliance with the OEMPr**

The same records used for monitoring the activities in [6.4.1](#) can be used to monitor compliance with the OEMPr. Records of non-compliance must be kept. These records must include details of the offence, offender and penalty.

## **8 LEGISLATIVE REQUIREMENTS**

### **8.1 Penalties for Non-Compliance**

Penalties in terms of Chapter 9 of the Western Cape Bill on Planning and Development as published in the Extraordinary Provincial Gazette No 5183, 3 October 1997, are applicable for any action, which leads to damage to the natural environment.

In addition to the penalties in terms of the Act (NEMA), spot fines up to a maximum value of R10 000 per offence can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMP (FINES ISSUED WILL INCREASE EXPONENTIALLY FOR REPEAT OFFENCES).

In the event of damage being caused, the HOA will be responsible for the cost of cleanup, repair or rehabilitation as necessary, as well as being liable for the fine. Where appropriate the HOA can pass the fine on to the individual home owner or contractor as the case may be.

A fund is to be established for the collection of fines and the spending of this fund is to be at the discretion of the ECO for environmental rehabilitation of the area.

The OEMPr should be revised / updated every five years to accommodate for an ever changing environment. It is the responsibility of the WARC to ensure that the OEMPr is revised.

### **8.2 NEMA Environmental Impact Assessment Regulations Appendix 4**

The National Environmental Management Act (Act 107 of 1998 and Amendment Act (Act 62 of 2008) are the most important legislation affecting this EMP, as it controls the possible impacts of the proposal on the environment. Sections of the Act which deals with Compliance monitoring and Offences are relevant to the various environmental impacts that this development may have.

An EMPr must comply with Section 24N of NEMA and the Environmental Impact Assessment Regulations 2014 (GN 982 Appendix 4) which requires that it must include the following:

*Table 1 - NEMA EIA Regulation Appendix 4 requirements of an EMPr*

REQUIREMENTS	REPORT SECTION
1. An EMPr must comply with section 24N of the Act and include-	
(a) details of- (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	<p style="text-align: center;"><b>Page 3</b> <b>Page 11</b> <b>Annexure E</b></p>
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	<p style="text-align: center;"><b>Page 7 - 8, 10</b></p>
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	<p style="text-align: center;"><b>Annexure A</b></p>
(d) a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	<p style="text-align: center;"><b>Page 8 - 9</b> <b>Page 13 - 16</b></p>
(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices;	<p style="text-align: center;"><b>Page 13 - 16</b></p>

<p>(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and</p> <p>(iv) comply with any provisions of the Act regarding financial provision for rehabilitation, where applicable;</p>	
<p>(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);</p>	<p><b>Page 13 – 16</b></p>
<p>(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f)</p>	<p><b>Page 13 – 16</b></p>
<p>(i) an indication of the persons who will be responsible for the implementation of the impact management actions;</p>	<p><b>Page 13 – 16</b></p>
<p>(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;</p>	<p><b>Page 13 – 16</b> <b>Page 28</b></p>
<p>(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);</p>	<p><b>Page 13 – 16</b></p>
<p>(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;</p>	<p><b>Page 13 – 16</b> <b>Page 29 and 28</b></p>
<p>(m) an environmental awareness plan describing the manner in which-</p> <p>(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and</p> <p>(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and</p>	<p><b>Page 17 and Annexure B</b></p>
<p>(n) any specific information that may be required by the competent authority.</p>	<p><b>Page 23</b></p>