ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Proposed Nature Estate on Farm 1043 Rehoboth

ABSTRACT

This ESMP was prepared for the application for an Environmental Clearance Certificate at the Ministry of Environment, Forestry and Tourism. It translates the anticipated impacts of the development into management actions to be implemented during its planning, construction, and operational phases.

STEPHANIE VAN ZYL

stephanie@envirod.com, 0811287002

PROJECT NAME	Proposed Nature Estate with associated facilities on Farm 1043 Rehoboth
STAGE OF REPORT	Environmental and Social Management Plan
CLIENT	Sandwerf2 (Pty) Ltd Enquiries: Leon Barnard Tel: (+264) 811281625 Email: leon@gracefarming.com
LEAD CONSULTANT	Enviro Dynamics Enquiries: Stephanie van Zyl Tel: (+264) 811287002 E-Mail: stephanie@envirod.com
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REPORT AUTHOR	Stephanie van Zyl

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INTRODUCTION

1.1. BACKGROUND

Sandwerf 2 Investments (Pty) Ltd , the owner of Farm 1043, Rehoboth, intends to develop a nature estate on the land. For this purpose, the portion will be subdivided and services constructed. The owner appointed Enviro Dynamics to apply for an Environmental Clearance Certificate for the project in terms of the Environmental Management Act (2007) and its Regulations (2012).

Figure 1: Locality map

1.2 PURPOSE

This document is the Environmental and Social Management Plan, which translates the impacts identified in the Environmental Scoping Report for the project, into measurable and concrete management steps to address them. The management actions are set out for each phase of the development , namely planning, construction and operation.

1.3 KEY PROJECT COMPONENTS

The development will consist of the following key components as illustrated on the not-to-scale layout in Figure 2 overleaf.

1.3.1 Parking and administration (Portion 1)

1.3.2 Residential / Equestrian Component (Portions 2–15, 19–23, 26–32, and 48–55) - These portions will be low-density equestrian homesteads

1.3.3 Hospitality / Accommodation Establishment (Portion 16), for short to medium term visitors

1.3.4 General Residential (Portions 17–18 and 24–25), for estate living without horse care or large plots

1.3.5 Agricultural Use – Horse Stables (Portions 33–45) – communal and private

1.3.6 Private Open Space/ Recreational Use (Portions 46–47)

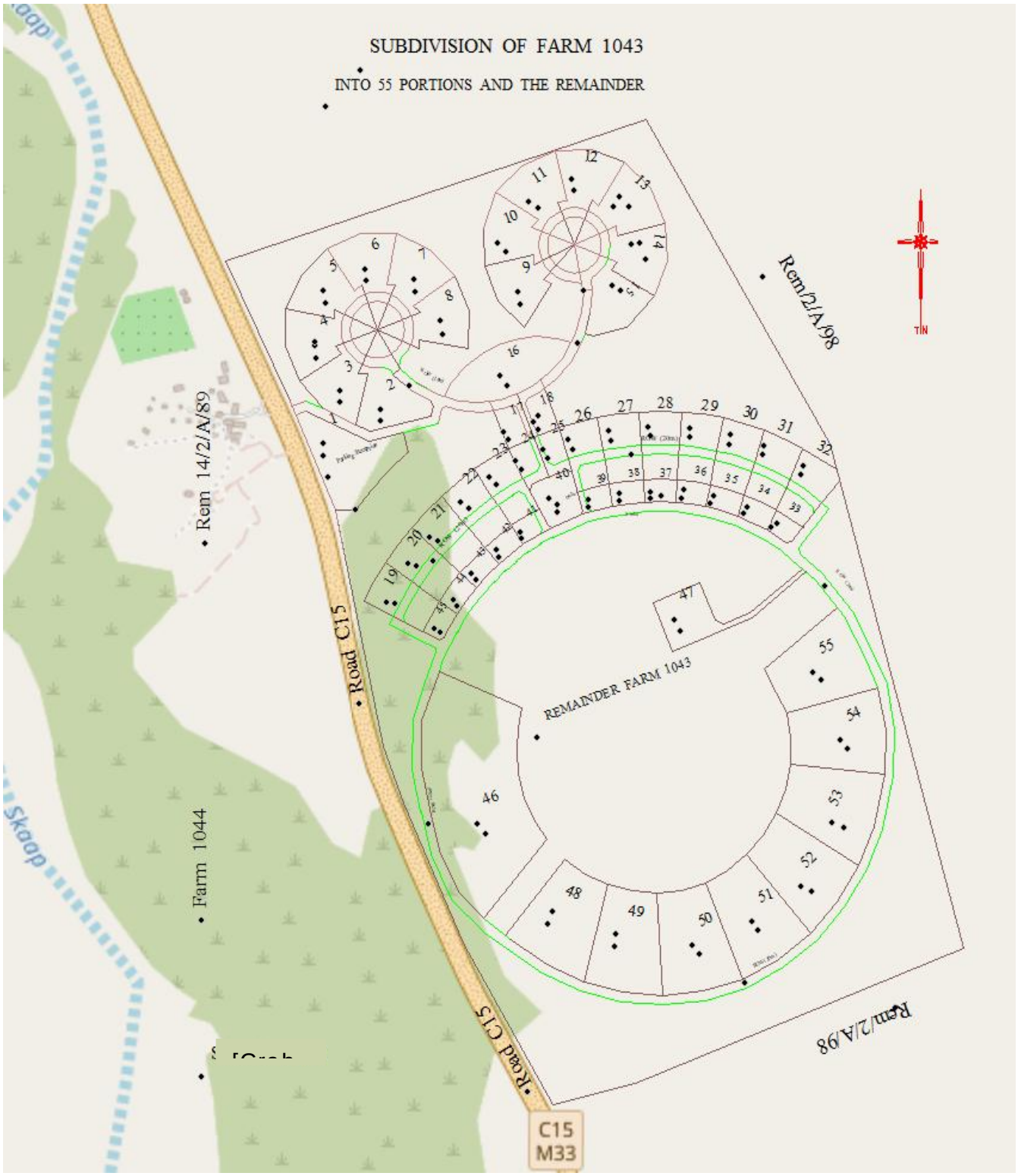

Figure 2: Proposed layout (not to scale)

1.4 PROPOSED INFRASTRUCTURE

All infrastructure will be designed in compliance with municipal standards and building regulations. Plans will be submitted to the Rehoboth Municipality for approval prior to construction.

1.4.1 Water

Water will be sourced from two existing boreholes with sufficient yield.

- Water will be distributed to individual portions via connection points
- Storage tanks will ensure a minimum 48-hour reserve capacity.

1.4.2 Sewer and Waste Water

As no municipal sewer connections are available a biological sewer system is being implemented for each unit.

1.4.3 Solid Waste Management

- Waste collection will adhere to local authority regulations
- Collection will be conducted by licensed private contractors

1.4.4 Electricity

- Each household will have its own solar system with battery energy storage system.

1.4.5 Access

- Access is via a 20 m right of way servitude from the C15
- All internal access roads will be gravel compacted and designed for low-volume, low-speed movement

2 MANAGEMENT STRUCTURE

What is an Environmental and Social Management Plan (ESMP)?

An ESMP is a register of management actions and guidelines needed to ensure that undue or reasonably avoidable adverse impacts of the planning, construction, operation, and decommissioning of a project are prevented; and that the positive benefits of the project are enhanced. It assigns responsibilities and is used as a checklist to monitor compliance.

What are the legal implications and my obligations under this Plan?

The implementation of an ESMP is required in terms of the Environmental Management Act of 2007 and its Regulations of 2012. Therefore, Sandwerf 2 (hereinafter the Developer) is under a legal obligation to adhere to the recommendations in the Environmental and Social Management Plan. As shows overleaf, the Developer will likely transfer some of the elements to other parties, in which case this ESMP should also be made part of those agreements.

Stages of the development covered

This ESMP focusses on the planning, construction, operation and maintenance of the infrastructure at the Sandwerf nature estate.

Responsibilities

The overall responsibility for the implementation of this ESMP lies with the Developer. Any staff or contractors appointed by the Developer will adhere to the provisions of this ESMP, depending on their designations. It is the responsibility of Developer to ensure all aspects in this document are assigned to staff/service providers, who have the technical proficiency and experience to carry out its requirements.

3 LEGAL AND PERMIT REQUIREMENTS

Table 1 below contains a list of the legal requirements that need to be adhered to during the construction and operation of the estate. These requirements are the environmentally and socially focused ones and do not include all legal requirements pertaining to the development.

Table 1: Relevant legislated permit requirements

Theme	Legal Instrument	Management Requirements	Contact Person
Environmental	Environmental Management Act 7 of 2007 EIA Regulations (EIAR) GN 57/2007 (GG 3812)	The amendment, transfer or renewal (after three years) of the Environmental Clearance Certificate (EIAR s19 & 20). The conditions of the ECC are to be implemented and normally include 6-monthly monitoring reports.	Ms Saima Angula Tel: 061 284 2751
Archaeology	National Heritage Act 27 of 2004	All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.	Tel: (061) 244 375/ 385/594
Water	Water Act 54 of 1956 Water Resources Management Act 13 of 2013 (came into force August 2023).	Water abstraction licenses are required for water abstraction and use – under the jurisdiction of the Department of Water Affairs, Ministry of Agriculture, Water and Land Reform (MAWLR)	Deputy Director of Policy and Water Law Administration
Traffic	Road Traffic and Transport Act 1999	The entire act is applicable including the registration of vehicles, driving licenses, transport of workers, etc.	
Removal of trees	Forest Regulations, 2015 of the Forest Act, 2001	Protected trees in terms of these Regulations should be protected, and only removed if necessary, for which a permit is required.	Deputy Director: Forest & Botanical Research Ms. Esmerialda Strauss Tel:+264 61 208 7327 Email:Esmerialda.Strauss@meft.gov.na

4 MANAGEMENT DETAILS

4.1 PLANNING AND TENDER PREPARATION

Table 1: Management requirements for the Planning and Design phase

ASPECT	requirement
Tender documents	• Ensure that the relevant parts of this ESMP (i.e. construction and other as indicated) are included in all construction contracts. • Communicate specific details to the tenderers, to ensure they are fully aware of specific restrictions, e.g. employment, borrow pits, strict conservation orientation, etc.)
Communication	• Communicate the outset of construction to the neighboring farm owners and Dordabis community leaders. • Ensure the grievance mechanism is in place and publish its details.
Survey	• During the survey, identify all mature trees, to be removed, conserved, and possibly to be conserved and mark them physically.
Design	• Plan the water reticulation and effluent treatment system, inclusive of water metering – including at very household, and every stable, and all other significant water users for water demand management purposes. • Finalise solar installations in design stage. • Consider deviations of the road route where trees need to be conserved. Design buildings around trees to optimize conservation. Consider designs on the slopes to prevent scars, erosion and slow down run-off.
Workforce accommodation	• Consider in case of workforce from outside, where they will be accommodated, in collaboration with the contractor. (The aim is to have as many workers as possible employed from Dordabis).
Permits	• The permits for the boreholes should be applied for according to the section: legal permit requirements. Permit conditions are to be met, also see Section : Resource conservation. • The permit for the effluent treatment facility should be applied for according to the section: legal and permit requirements. Also see Section 5.1.2.

4.2 CONSTRUCTION PHASE – MITIGATION FOR INCLUSION IN CONSTRUCTION CONTRACTS

4.2.1 Environmental performance indicators:

- The 'environmental footprint' of the lodge is limited to the lodge area itself, with the surrounding veld largely untouched.
- Environmental resources including water and energy are stewarded to prevent waste.
- Solid waste and effluent is minimised, treated and minimised to prevent pollution.
- Management has a good relationship with the labour, who are employed according to the law, and their grievances are reasonably and timeously addressed.
- Stakeholders to the project are provided with information concerning the project, their grievances are reasonably and timeously addressed.

4.2.2 Who is responsible?

- ✓ The building contractor (and other contractors) must be instructed in writing by the Project Manager to implement the mitigation measures. It is then his responsibility to ensure that ALL the measures are implemented.
- ✓ The Project Manager should inspect the site at least twice per month to make sure that the measures are being implemented.
- ✓ The Project Manager must do a final inspection once the facility is built and issue the building contractor with a completion letter once s/he is satisfied that the job has been done in accordance with this EMP.
- ✓ The final payment (10%) should only be made after the completion letter has been issued.
- ✓ The building contract must have a person responsible for environmental, health and safety aspects of the project (SHE officer) and should be able to instruct and monitor the provisions of the EMP.

4.2.3 Actions required to minimize negative impacts (mitigation measures)

a. Site preparation

- The building contractor should mark out (on the ground or with hazard tape) the areas of all structures before any workers, equipment or building materials are brought in. A 2-metre buffer can be allowed around the perimeter of buildings to allow building activities, but no trees should be cut or damaged within this buffer zone.
- The marked-out area should be inspected and approved by the Project Manager. Thereafter, all site staff should be clearly informed that they may not move or disturb any areas beyond those limits.
- A suitable laydown area needs to be selected in collaboration with the Developer, Project Manager, which would not be visually displeasing. The site should preferably be an already disturbed area, or which will be used as parking or other cleared facility in future.
- All stockpiling, cement mixing, is to be done at the laydown area and nto in the natural veld.

b. Sourcing of building materials

- Building sand and other locally-derived building materials should only be procured from commercial sites which have Environmental Clearance Certificates.
- Rocks that will be used for construction or cladding will be sourced as per instruction by the Developer/Project Manager.

c. Clearing of land

- The only land that may be cleared is the roads, the areas where buildings will be erected, parking bays, driveways and pathways.
- As much land clearing as possible (e.g. the removal of stones and rocks) should be done by hand. Heavy earthmoving equipment, which will disturb the soil, create much dust, and leave tracks and scars, should be used minimally or not at all.
- The builder may only disturb an area of up to 2 metres around each building site or development area (e.g. the main lodge, chalets, staff quarters, driveway, parking area). This is enough space to move around with wheel barrows, scaffolding and other equipment. As noted earlier, this 'footprint area' should be demarcated from day 1, with metal droppers and hazard tape so that everyone on site knows exactly which areas are off-limits.

d. Employment of and facilities for workers

- Workers must preferably be sourced from Dordabis. All workers which are permanently employed should be declared and they are exempt from this provision. No other workers will be sourced from outside the project.
- Only workers not from Dordabis will require accommodation. A suitable solution for accommodation is to be agreed on with the Project Manager/Developer.

- Wherever the workers are housed, they must be provided with water, proper toilets and washing facilities.
- Cooking facilities must be provided, preferably with gas cookers rather than open fires to prevent the need to gather firewood. If open fires are used, these must be made in a designated cleared kitchen area so that there is no possibility for a veld fire occurring.
- Should Dordabis community members wish to cook for the workers, this needs to be arranged and a suitable site identified.
- The transport of workers should be done using vehilcles permitted by the Roads Authority.

e. Management of waste

- No paint, solvents, thinners, diesel, oil or any other harmful substances may be poured onto the ground. They must be collected in a container and removed from site for proper disposal.
- All fuels and other chemicals must be stored in leak-proof containers, ensuring that they cannot react with each other or be spilt into the ground.
- If vehicles or other equipment are serviced or repaired on-site, any grease, oil etc. must be collected in a container and removed from the site for proper disposal (see waste management section for details).
- Separate all organic waste (e.g. kitchen waste), and dump this in a designated compost heap. This should be an enclosed place where it cannot be dug out and messed up by scavengers.
- All combustible waste (e.g. empty cement bags), should be burned in a drum or enclosed container, with the necessary care taken to avoid the possibility of starting a veld fire.
- All non-combustible but recyclable waste (e.g. bottles, tins, plastic packaging) should be neatly stored to optimize re-use and recycling, or must be removed from site at least once a week.
- Any waste that is stored temporarily at the site must be secured to avoid it being blown into the veld, and to prevent it being scavenged by animals such as jackals, crows.
- Measures must be taken to prevent any waste from attracting scavengers (e.g. kitchen waste should not be left to rot in the open so that it generates smells which will attract animals).
- Any waste that cannot be composted or re-used or recycled or burned should only be dumped at a properly managed rubbish dump (e.g. at Rehoboth).

f. Use of water during construction

- Although water is needed for many aspects of construction, it must be used sparingly at all times.
- All taps, pipes and tanks must be managed and maintained so that they do not leak.

g. Protection of plant and wildlife

- No plants may be removed from the site unless same as been permitted by the Project Manager.
- No wild animals may be trapped or killed for any reason whatsoever.
- Workers who are found guilty of this behaviour should receive written warnings in line with the labour act.

h. Transport and storage of fuel and other materials

- Loads upon vehicles must be properly secured to avoid items falling off the vehicle at any time.
- All materials (e.g. cement, bricks, poles, stones, pipes, etc.) must be stored at a central storage area (laydown area aboe) on site so that the site is neat and orderly, and to avoid a situation where materials are lying about in a disorderly manner.
- All fuels, paints, solvents and other chemicals must be stored in watertight containers, ensuring that they cannot react with each other or be spilt onto the ground.

i. Servicing of vehicles and other equipment

- If vehicles or other equipment are serviced or repaired on-site, any grease, oil etc. must be collected in a container and removed from the site for proper disposal (see waste management section for details)

i. Servicing of vehicles and other equipment

- Specifications for the road to be provided by the Developer's representative.
- Place the access roads on existing tracks.
- Excavate the road as little as possible in order to reduce the scar effect (though it is accepted that excavation will be necessary).
- Do not scrape any areas other than the road itself (i.e. the earthmoving equipment should only work in the road area, and not venture into the veld).
- If the road is to be surfaced, use natural materials (rocks with concrete) so that the colour of the road is similar to the surrounding area.

4.3 MITIGATION ACTIONS FOR ALL PHASES OF THE PROJECT

The table below is an overview of the themes to be covered during all phases of the project.

Table 4: Environmental management actions for the operational phase

Theme	Objective	section
Pollution prevention Waste management and effluent treatment	Sustainable waste management practices at Sandwerf	Section 5.1
Gravel and Sand Extraction	Ensure sustainable extraction and with the necessary permits.	Section 5.2
Health and safety	Safeguard health and safety of laborers.	Section 5.3
Dust and noise	Avoid and where not possible minimise dust and noise associated with maintenance and construction activities.	Section 5.4
Environmental training and awareness	Awareness raising and training regarding the provisions of the EMP as well as importance of safeguarding environmental resources.	Section 5.5
Environmental conservation	Resource efficiency particularly water and energy.	Section 5.6
Stakeholder communication	Provide a platform for stakeholders to raise grievances and receive feedback and hence minimise negative conflict	Section 5.7

4.3.1 POLLUTION PREVENTION, SOLID WASTE MANAGEMENT AND EFFLUENT TREATMENT

ASPECT	MITIGATION MEASURE
1. Pollution prevention	*1.1. All heavy vehicles and equipment on site should be provided with a drip tray or should be parked on a concrete surface with an oil trap.* *1.2. Drip trays are to be transported with vehicles wherever they go.* *1.3. Drip trays should be cleaned daily and spillage handled, stored and disposed of as hazardous waste.* *1.4. All heavy construction vehicles should be maintained regularly to prevent oil leakages.* *1.5. Maintenance and washing of heavy vehicles should take place only at a designated workshop area.* *1.6. The workshop area should be lined with concrete.* *1.7. The workshop should have an oil-water separator to collect run-off from washing.* *1.8. All hazardous substances (e.g. fuel, paints, chemicals etc.) should be stored in an enclosed room which is locked and separate from the ground.* *1.9. All hazardous waste should be stored in a bunded area or skip before removal from the site. The hazardous waste should be disposed of at an approved hazardous waste disposal site (currently the Kupferberg Waste Disposal Site is the only nearest facility). Also see General waste section below regarding contractors.* *1.10. A spill clean-up kit should be kept on site, staff trained to use it and applied in case of a spill. Cleaned up spill to be treated as hazardous waste.*

	ASPECT		MITIGATION MEASURE
2.	Effluent treatment and disposal	*2.1.*	*The effluent treatment plant is to be monitored and managed according to the Effluent Permit issued by the Department of Water Affairs.*
		2.2.	*Effluent standards will likely be those of the Water Resources Management Act (2013).*
		2.3.	*A summary of the water quality results should be submitted to the DEA with the bi-annual monitoring reports. These results should include the same parameters as the Effluent Permit, clearly indicating incidences or patterns of non-compliance, the reasons for non-compliance as well as steps taken to rectify the same.*
3.	Waste collection and disposal	*3.1.*	*Waste is to be dealt with according to the principles of integrated waste management which is structured according to the levels of the mitigation hierarchy, namely reduce, reuse, repurpose, recycle and disposal. Should the waste collection be outsourced, then these principles should be the priority. The contract should include strict adherence to all applicable legislation, pertaining to the transport, storage and disposal of the waste. The contractor should dispose of the waste at a waste disposal facility which adheres to all applicable legislation, including the need for an Environmental Clearance Certificate.*
		3.2.	*Garden waste should be separated from other waste. The garden waste disposal area is to be constantly managed to ensure it remains clear of other wastes, which includes awareness raising of the residents. It should be fenced and protected from wind to prevent windblown material as needed. The contents should be managed and treated to facilitate re-use and decomposition as feasible, e.g. leaves and softer material separated for composting and/or mulching and wood separated for firewood. The area should have good drainage. Smaller stockpiles will ensure easy turning, to discourage rodents and reptiles. Management should consider making the wood available to the community who can use it for firewood.*
		3.3.	*Building rubble should be clear of all other wastes, involving constant awareness raising and reminders among residents. This material, provided it contains no hazardous waste or any contaminants, may be used as fill material, provided geotechnical standards apply where buildings or structures are planned. If used on open areas, it should be flattened, shaped, and covered preferably with topsoil retained separately.*

4.3.2 GRAVEL AND SAND EXTRACTION

ASPECT	MITIGATION MEASURE
1. Gravel and sand extraction	*1.1. All gravel required for any building and maintenance works on the estate will come from a commercial source. The operator/owner of such sources should have an Environmental Clearance Certificate (ECC) in place for such abstraction activities, identifying the specific sites where the material is abstracted and managed strictly according to the conditions of the ECC issued.* *1.2. Should Sandwerf wish to extract its own sand from the Skaap River (only for own use, not commercially), such sand should be removed as shallow layers instead of deep pits, avoiding the river banks or areas where vegetation occurs, avoiding the exposure of any tree roots. The sand should be extracted from the alluvial areas where the river most naturally deposits, to facilitate replenishment during floods.*

4.3.3 HEALTH, SAFETY AND LABOUR

ASPECT		MITIGATION MEASURE
1.	Health Safety and Labor	*1.1. The Developer and all contractors appointed shall adhere to the Labor Act in terms of Health and Safety.* *1.2. The Developer should ensure that the provisions of the Labor Act are applied to its workforce.*
2.	Road Safety	2.1. *Demarcate roads clearly.* 2.2. *Off-road driving should not be allowed.* 2.3. *All vehicles that transport materials to and from the site must be road worthy.* 2.4. *Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules (The Road Traffic and Transport Act, 1999). Note specifically also regulations pertaining to the transport of workers e.g. no workers to be transported on the back of an open truck.* 2.5. *Loads upon vehicles should be properly secured to avoid items falling off the vehicle.* 2.6. *All drivers (personnel and contractors) are to be free from the influence of alcohol.*

4.3.4 DUST AND NOISE

ASPECT		MITIGATION MEASURE
1.	Dust	*1.1. Dust suppression measures should be made applicable where there is a risk to nearby communities and the workforce.* *1.2. Place all stockpiles, screening activities and other dust producing activities downwind from sensitive receptors such as already built residences, etc. In cases where this is not possible, apply semi-purified or grey water to dust generating surfaces in windy conditions.*
2.	Noise	2.1. *Work hours should be restricted to between 08h00 and 17h00 where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas, unless the community agrees to extended working hours and the circumstances require a different schedule. Sundays are traditionally rest days in Namibia and should be respected by not allowing any work.*

4.3.5 ENVIRONMENTAL TRAINING AND AWARENESS

ASPECT	MITIGATION MEASURE
1. Environmental Induction (Training)	*1.1. All workers are to undergo environmental induction (training) which should include as a minimum the following:* • Explanation of the importance of complying with the ESMP. In case of construction works, refer to construction section of this ESMP. • Discussion of the potential environmental impacts of construction, operation and maintenance activities. • Employees' roles and responsibilities, including emergency preparedness, spills clean-up, etc. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities. • Explanation of the specific mitigation measures within this ESMP especially unfamiliar provisions. • This training must be undergone by all new workers before they may commence with work and should be repeated, with constant re-enforcement as necessary. • A signed copy is to be kept for every worker that this course was attended. Workers need to be made aware of disciplinary actions and/or penal measures and procedures in case of non-conformance. *1.2. Workers should also receive health and safety training according to the Health and Safety Regulations and as may be applicable.*

4.3.6 RESOURCE CONSERVATION

ASPECT	MITIGATION MEASURE
1. Water conservation	*1.1. Abstraction permits need to be applied for from DWA.* *1.2. Monitoring needs to be implemented according to the conditions of the permits.* *1.3. The Developer, to be taken over by the HOA, needs to establish a water conservation plan, which should include the following:* • The water resource management assigned to a manager- also to be responsible for monitoring of water according to the permits, submission of data, permit renewals. • Water metering to ensure water loss control • Rules for water use at the estate, including gardening limits and permitted vegetation in gardens (indigenous according to local climate) , pool covers, etc. • Rules at the horse stables to conserve water
2. Conservation of vegetation	2.1. *Mindfulness of and adherence to vegetation conservation according to the construction ESMP with any construction or maintenance works where trees are present, remains applicable.*
3. Materials camp and lay-down areas	3.1. *In case of maintenance or new construction, ensure materials camps and laydown areas are away from and downwind from residences. Select an area that has been disturbed where possible, or where there is no significant vegetation to be removed. Rehabilitate the area by reshaping and covering with topsoil that was kept beforehand.*
4. Energy efficiency	4.1. *Installations with a high energy demand within the control of the Developer/HOA are to be identified and energy consumption monitored.* 4.2. *Installations such as pumps should be fit for energy requirement and energy efficient* 4.3. *Solar installations should be promoted and % solar use optimised.*

4.3.7 STAKEHOLDER ENGAGEMENT

ASPECT	MITIGATION MEASURE
1. Stakeholder engagement	*1.1. Regular disclose to the Sandwerf community with regard to environmental targets and management.* *1.2. Engagement with neighboring stakeholders with regards to the aquifer management of the groundwater as per the monitoring requirements of the permits.* *1.3. Engagement with authorities as may be required.* *1.4. A grievance mechanism in place for stakeholders including the neighbours, workforce, etc. to lodge complaints and a feedback mechanism for timeous responses and handling of the complaints.*

6. COMPLIANCE AND ENVIRONMENTAL MONITORING

The following table is a quick reference of the monitoring requirements.

Table 5: Operation and maintenance phase mitigation measures

ASPECT	Monitoring	frequency
ECC, Abstraction permit, effluent permit renewals	ECC expiry date ..... Effluent permit expiry date..... .....Abstraction permit expiry date	Three-year cycles – see date, Summaries of below monitoring submitted bi-annually According to dates
Water demand and supply	Groundwater abstraction against permit conditions, including water demand management plan	Monthly and annually
	Groundwater levels compare with baseline levels	Monthly submitted annually
	Raw sewage volumes	Monthly