PROJECT STATUS

Title	Environmental Management Plan for the: Subdivision, Permanent Closure and Rezoning of Erf A from "Public Open Space" to "Residential 1", Otjiwarongo, Otjozondjupa Region		
Report Status	Final		
SPC Reference	W/25079		
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Report date	April 2026		
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LEGAL NOTICE

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ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
PR	Proponent's Representative
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GG	Government Gazette
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
HIV	Human Immuno-deficiency Virus
I&APs	Interested and Affected Parties
NHCN	National Heritage Council of Namibia
Reg.	Regulation
S	Section
SPC	Stubenrauch Planning Consultants
TB	Tuberculosis

1 INTRODUCTION

Mr Petrus Ngulondo hereinafter referred to as the proponent intends to undertake the following activities:

- **Subdivision of Erf 1508, Otjiwarongo Extension 5 into Erf A and Remainder;**
- **Permanent Closure of newly created Erf A as "Public Open Space"; and**
- **Rezoning of newly created Erf A from "Public Open Space" to "Residential 1" with a density of 1:700**

An Environmental Management Plan (EMP) is one of the most important outputs of the EIA process as it synthesises all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. This EMP details the mitigation and monitoring actions to be implemented during the following phases of these developments:

- Planning and Design – the period, prior to construction, during which preliminary legislative and administrative arrangements, necessary for the preparation of the development, are made and engineering designs are carried out. The preparation of construction tender documents forms part of this phase;
- Construction – the period during which the proponent, having dealt with the necessary legislative and administrative arrangements, appoints a contractor for the construction of the proposed development as well as any other construction process(s) within the development areas;
- Operation and Maintenance – the period during which the services infrastructure will be fully functional and maintained.

The decommissioning of these developments is not envisaged; however in the event that this should be considered some recommendations have been outlined in **Table 4-5**.

2 PROPOSED DEVELOPMENT

Erf 1508 has remained vacant for an extended period and currently detracts from the appearance and cohesion of the surrounding, fully developed residential neighbourhood. The construction of a single dwelling will transform the erf into a functional residential property, improve the streetscape, and contribute to a more consistent and attractive built environment.

Vacant open spaces can present safety and security concerns by providing concealed areas for unauthorised access. Developing the erf will improve visibility and natural surveillance, thereby enhancing safety for surrounding residents.

The proposed development is compatible with the existing residential land use of Otjiwarongo Extension 5 and will blend in with the surrounding properties without altering the character of the area. At a low density of 1:700 and an erf size of 1,093 m², only one dwelling unit is permitted, ensuring minimal traffic and infrastructure impacts.

A portion of the erf will remain as public open space, preserving the opportunity for future recreational development by the local authority. The proposal therefore balances residential needs with the retention of community open space.

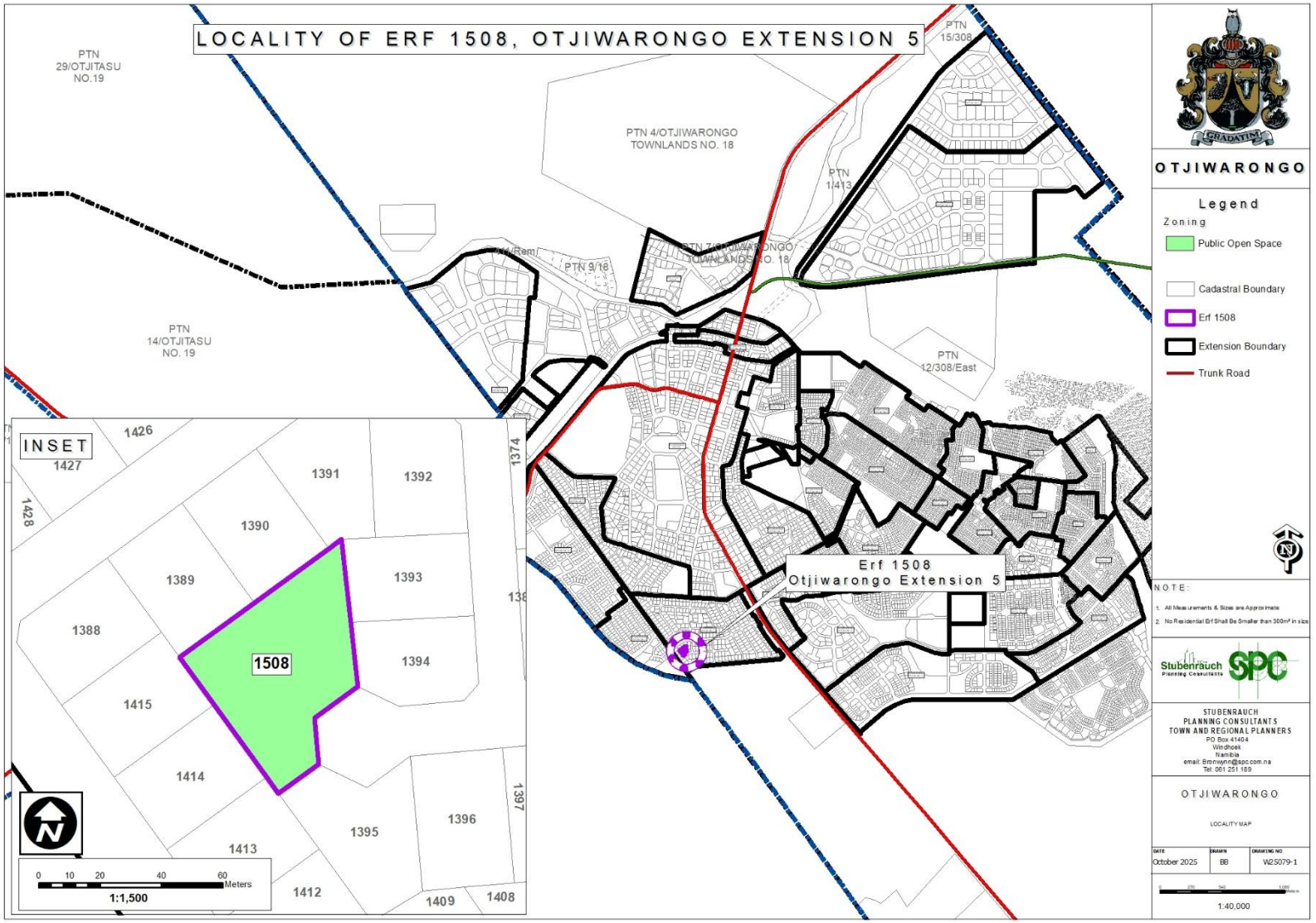


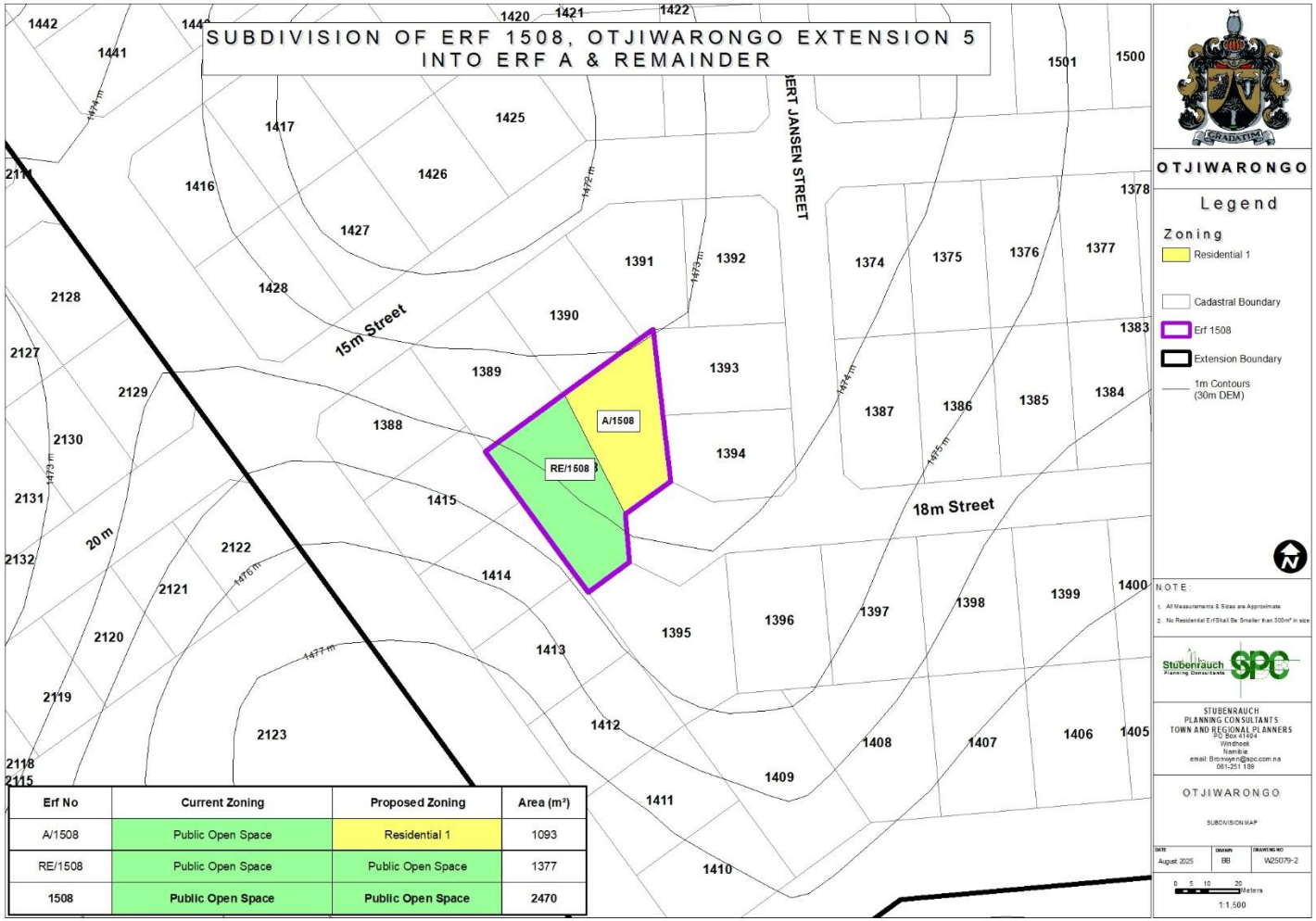
Figure 1: Locality map of Erf 1508, Otjiwarongo Extension 5

2.1 The Subdivision of Erf 1508, Otjiwarongo Extension 5 into Erf A and the Remainder

The Proponent intends to subdivide erf 1508, Otjiwarongo into Erf A and the Remainder, this step is required to facilitate the allocation of a portion of the public open space to the Proponent as depicted in **Figure 2 and 3** below. The subdivision will create erven with the sizes as depicted by **Table 1** below.

Table 1: Summary of Erf sizes

Erf No.	Current Zoning	Proposed Zoning	Area (m^2)
A/1508	Public Open Space	Residential 1 (1:700)	1093
RE/1508	Public Open Space	Public Open Space	1377
1508	Public Open Space	Public Open Space	2470



Erf No	Current Zoning	Proposed Zoning	Area (m²)
A/1508	Public Open Space	Residential 1	1093
RE/1508	Public Open Space	Public Open Space	1377
1508	Public Open Space	Public Open Space	2470

Figure 2: Subdivision of Erf 1508, Otjiwarongo Extension 5 into Erf A and Remainder

Erf No	Current Zoning	Proposed Zoning	Area (m²)
A/1508	Public Open Space	Residential 1	1093
RE/1508	Public Open Space	Public Open Space	1377
1508	**Public Open Space**	**Public Open Space**	**2470**

Figure 2: Aerial Map of the subdivision of Erf 1508, Otjiwarongo Extension 5 into Erf A and Remainder

2.1 Permanent Closure of newly created Erf A/1508 as "Public Open Space"

The permanent closure of Erf A/1508 as "Public Open Space" is to facilitate the rezoning of said portion from "Public Open Space" to "Residential 1" with a density of 1:700. Please refer to **Figure 4** below.

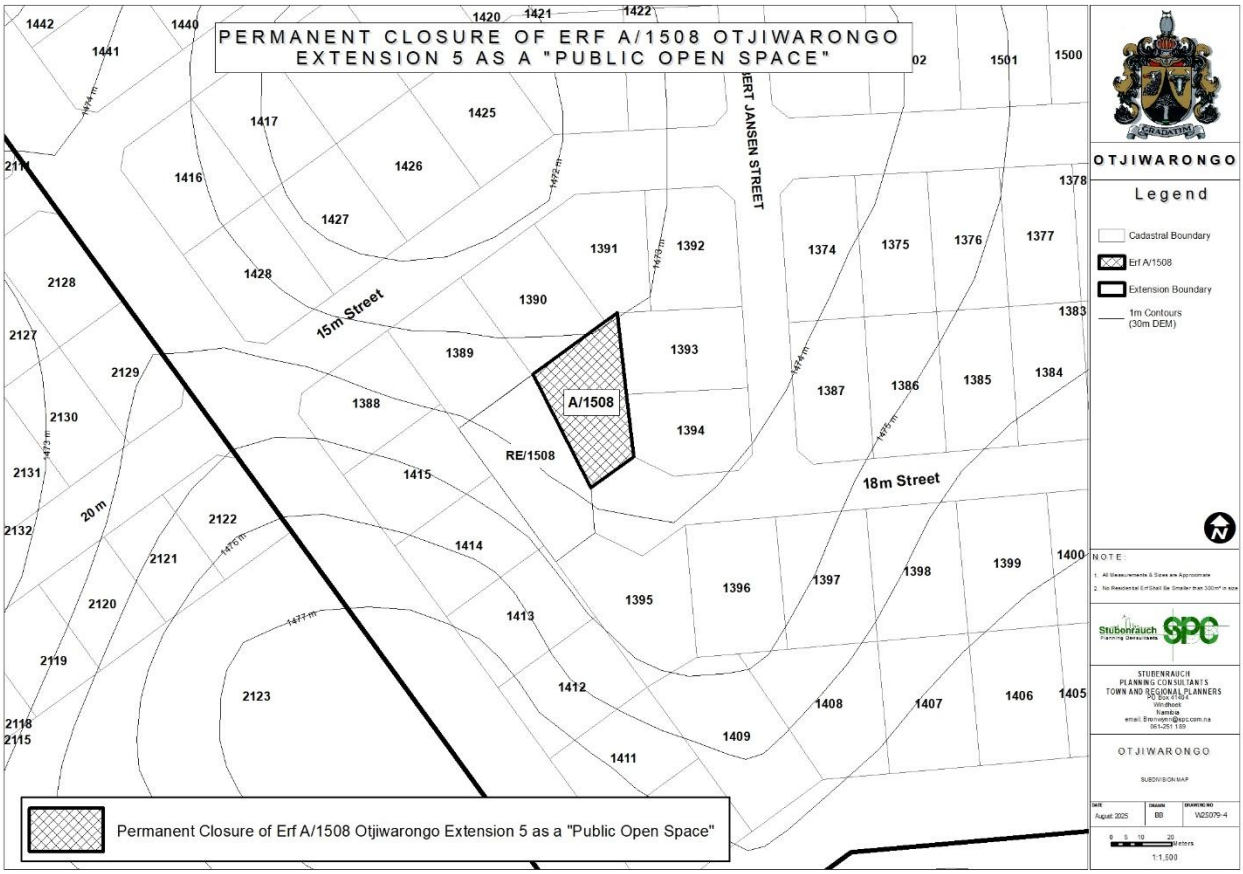


Figure 3: Permanent Closure of newly created Erf A/1508 as "Public Open Space"

2.2 Rezoning of newly created Erf A/1508 from "Public Open Space" to "Residential 1" with a density of 1:700

In order to align the intended residential use with the appropriate legal zoning, the newly created Erf A/1508, Otjiwarongo Extension 5 will need to be rezoned to "Residential 1" with a density of 1:700. The development potential will be capped at 1 dwelling unit at the proposed density of 1:700. The remaining extent of Erf 1508, Otjiwarongo Extension 5 will be left as Public Open Space. The subject rezoning will occur as depicted by **Figure 5** below.

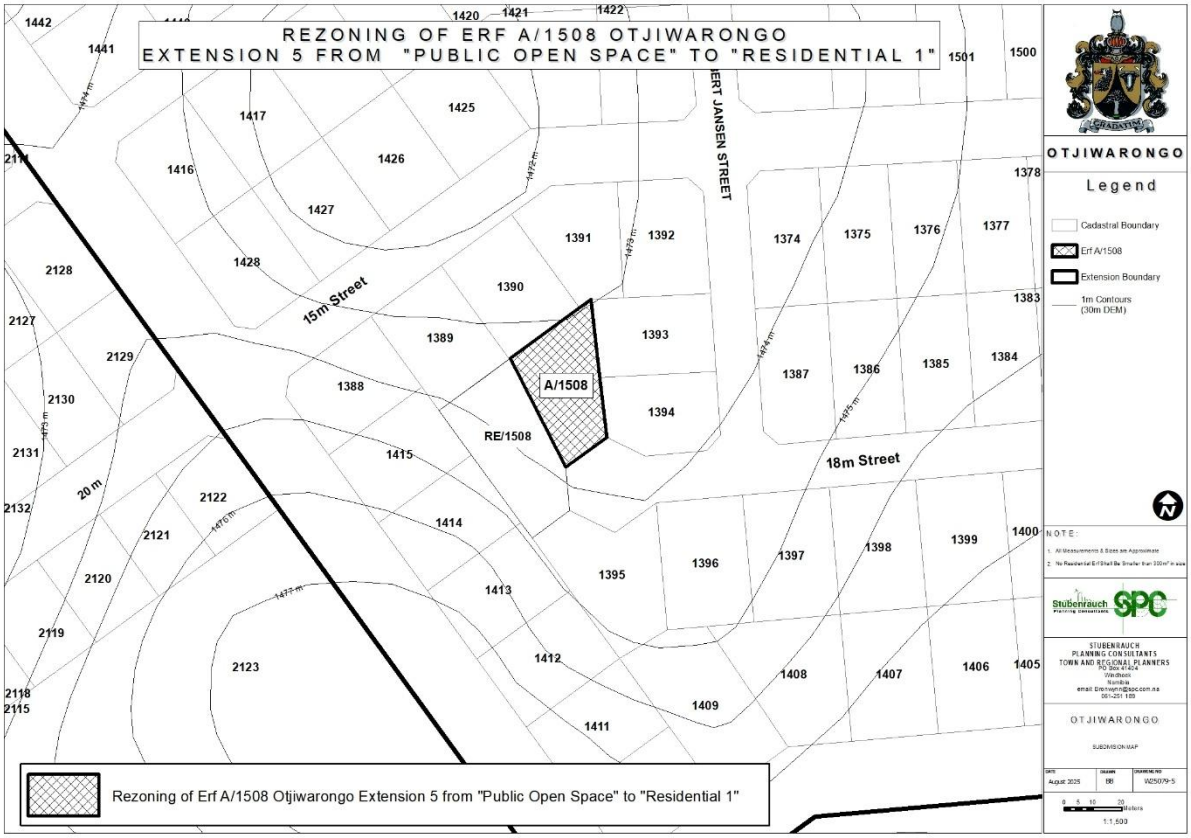


Figure 4: Rezoning of newly created Erf A/1508 from "Public Open Space" to "Residential 1" with a density of 1:700

3 ROLES AND RESPONSIBILITIES

The proponent is ultimately responsible for the implementation of the EMP, from the planning and design phase to the decommissioning phase (if these developments are in future decommissioned) of these developments. The proponent will delegate this responsibility as the project progresses through its life cycle. The delegated responsibility for the effective implementation of this EMP will rest on the following key individuals:

- Proponent's Representative;
- Environmental Control Officer; and
- Contractor (Construction and Operations and Maintenance).

3.1 PROPONENT'S REPRESENTATIVE

The proponent should assign the responsibility of managing all aspects of these developments for all development phases (including all contracts for work outsourced) to a designated member of staff, referred to in this EMP as the Proponent's representative (PR). The proponent may decide to assign this role to one person for the full duration of these developments, or may assign a different PR to each of the development phases – i.e. one for the planning and design phase, one for the construction phase and one for the operation and maintenance phase. The PR's responsibilities are as follows:

Table 3-1 Responsibilities of PR

Responsibility	Project Phase
Making sure that the necessary approvals and permissions laid out in **APPLICABLE LEGISLATION** Legal provisions that have relevance to various aspects of these developments are listed in Error! Not a valid bookmark self-reference. below. Table 4-1 are obtained/adhered to.	• Throughout the lifecycle of these developments
Making sure that the relevant provisions detailed in **Table 4-2** are addressed during planning and design phase.	• Planning and design phase
Monitoring the implementation of the EMP weekly.	• Construction • Operation and maintenance
Suspending/evicting individuals and/or equipment not complying with the EMP	• Construction • Operation and maintenance
Issuing fines for contravening EMP provisions	• Construction

	• Operation and maintenance

3.2 ENVIRONMENTAL CONTROL OFFICER

The proponent should assign the responsibility of overseeing the implementation of the whole EMP on the ground during the construction and operation and maintenance phases to an independent and suitably qualified external consultant, referred to in this EMP as the Environmental Control Officer (ECO). The proponent may decide to assign this role to one person for both phases, or may assign a different ECO for each phase. The ECO will have the following responsibilities during the construction and operation and maintenance phases of these developments:

- Management and facilitation of communication between the proponent, PR, the contractors, and Interested and Affected Parties (I&APs) with regard to this EMP;
- Conducting bi-annual site inspections and auditing all construction and/or infrastructure maintenance areas with respect to the implementation of this EMP (audit the implementation of the EMP);
- Assisting the Contractor in finding solutions with respect to matters pertaining to the implementation of this EMP;
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP;
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP; and
- Undertaking an annual review and bi-annual audit of the EMP and recommending additions and/or changes to this document.

3.3 CONTRACTOR

Contractors appointed by the proponent are automatically responsible for implementing all provisions contained within the relevant chapters of this EMP. Contractors will be responsible for the implementation of this EMP applicable to any work outsourced to subcontractors. **Table 4-3** applies to contractors appointed during the construction phase and **Table 4-4** to those appointed during the operation and maintenance phase. In order to ensure effective environmental management, the aforementioned chapters should be included in the applicable contracts for outsourced construction, operation and maintenance work.

The tables in the following chapter (**Chapter 4**) detail the management measures associated with the roles and responsibilities that have been laid out in this chapter.

4 MANAGEMENT ACTIONS

The aim of the management actions in this chapter of the EMP is to avoid potential impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

The following tables provide the management actions recommended to manage the potential impacts rated in the scoping-level EA conducted for these developments. These management actions have been organised temporally according to project phase:

- Applicable legislation (**Table 4-1**);
- Planning and design phase management actions (**Table 4-2**);
- Construction phase management actions (**Table 4-3**);
- Operation and maintenance phase management actions (**Table 4-4**); and
- Decommissioning phase management actions (**Table 4-5**).

The proponent should assess these **commitments** in detail and should acknowledge their commitment to the specific management actions detailed in the tables below.

4.1 ASSUMPTIONS AND LIMITATIONS

This EMP has been drafted with the acknowledgment of the following assumptions and limitations:

- This EMP has been drafted based on the scoping-level Environmental Assessment (EA) conducted for the proposed development. SPC will not be held responsible for the potential consequences that may result from any alterations to the above-mentioned layout.
- It is assumed that construction labourers will be sourced mostly from the Okahandja townlands area and that migrant labourers (if applicable) will be housed in established accommodation facilities within Okahandja.
- No engineering designs have been carried out for the development of the associated services infrastructure (roads, potable water, storm water, sewerage and electrical reticulations).

4.1 APPLICABLE LEGISLATION

Legal provisions that have relevance to various aspects of these developments are listed in Error! Not a valid bookmark self-reference. below.

Table 4-1: Legislation applicable to proposed development

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Constitution of the Republic of Namibia as Amended	Article 91 (c) provides for duty to guard against "the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia." Article 95(l) deals with the "maintenance of ecosystems, essential ecological processes and biological diversity" and sustainable use of the country's natural resources.	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to achieve that. Section 3 details the principle of Environmental Management	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process.	The following listed activities are triggered by the proposed project: **Activity 5.1 (a) Land Use and Development Activities**
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	The pollution of water resources should be avoided during construction and operation of the development.
The Ministry of Environment and Tourism (MET) Policy on HIV & AIDS	MET has recently developed a policy on HIV and AIDS. In addition, it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	The proponent and its contractor must adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when migrant construction workers interact with local communities.
Urban and Regional Planning Act 5 of 2018	The Act provides to consolidate the laws relating to urban and regional planning; to provide for a legal framework for spatial planning in Namibia; to provide for principles and standards of spatial planning; to establish the urban and regional planning board; to decentralise certain matters relating to spatial planning; to provide for the preparation, approval and review of the national spatial development framework, regional structure plans and urban structure plans; to provide for the preparation, approval, review and amendment of zoning schemes; to provide for the establishment of townships; to provide for the alteration of boundaries of approved townships, to provide for the disestablishment of approved townships; to provide for the change of name of approved townships; to provide for the subdivision and consolidation of land; to provide for the alteration, suspension and deletion of conditions relating to land; and to provide for incidental matters.	The rezoning, subdivision and consolidation of land as well as the establishment of townships is to be done in accordance with the act.
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.	The development must comply with provisions of the Local Authorities Act.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Labour Act no. 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	Given the employment opportunities presented by the development, compliance with the labour law is essential.
National Heritage Act No. 27 of 2004	The Act is aimed at protecting, conserving and registering places and objects of heritage significance.	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.
Roads Ordinance 17 of 1972	• Section 3.1 deals with width of proclaimed roads and road reserve boundaries • Section 27.1 is concerned with the control of traffic on urban trunk and main roads • Section 36.1 regulates rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads • Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads.	Adhere to all applicable provisions of the Roads Ordinance.
Public and Environmental Health Act of 2015	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979).	Contractors and users of the proposed development are to comply with these legal requirements.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Nature Conservation Ordinance no. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants must be managed within the legal confines.
Water Quality Guidelines for Drinking Water and Wastewater Treatment	Details specific quantities in terms of water quality determinants, which wastewater should be treated to before being discharged into the environment	These guidelines are to be applied when dealing with water and waste treatment
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.	This EIA considers this term of Environment.
Water Resources Management Act No. 11 of 2013	Part 12 deals with the control and protection of groundwater Part 13 deals with water pollution control	The pollution of water resources should be avoided during construction and operation of the development. Should water need to be abstracted, a water abstraction permit will be required from the Ministry of Water, Agriculture and Forestry.
Forest Act 12 of 2001 and Forest Regulations of 2015	To provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires; to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No. 1of 1923), Preservation of Trees and Forests Ordinance, 1952 (Ordinance No. 37 of 1952) and the Forest Act, 1968 (Act No. 72 of	Protected tree and plant species as per the Forest Act No 12 of 2001 and Forest Regulations of 2015 may not be removed without a permit from the Ministry of Agriculture, Water and Forestry.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	1968); and to deal with incidental matters.	
Atmospheric Pollution Prevention Ordinance No 45 of 1965	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	The development should consider the provisions outlined in the act. The proponent should apply for an Air Emissions permit from the Ministry of Health and Social Services (if needed).
Hazardous Substance Ordinance 14 of 1974	To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to provide for the division of such substances into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.	The handling, usage and storage of hazardous substances on site should be carefully controlled according to this Ordinance.
Soil Conservation Act No 76 of 1969	Act to consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources	The proposed activity should ensure that soil erosion and soil pollution is avoided during construction and operation.

4.2 PLANNING AND DESIGN PHASE

The PR should ensure that the management actions detailed below should be adhered to during the period before the construction of the services infrastructure starts.

Table 4-2: Planning and design management actions

Aspect	Management Actions	Responsible Person
Visual Impacts	• It is recommended that more 'green' technologies be implemented within the architectural designs and building materials of the development where possible in order to minimise the visual prominence of such a development within the more natural surrounding landscape. • Natural colours and building materials such as wood and stone should be incorporated as well as the use of indigenous vegetation in order to help beautify the development. ○ Visual pollutants can further be prevented through mitigations (i.e. keep existing trees, introduce tall indigenous trees; keep structures unpainted and minimising large advertising billboards).	Proponent
Existing Service Infrastructure	• It is recommended that alternative and renewable sources of energy be explored and introduced into the proposed development to reduce dependency on the grid. • Solar geysers and panels should be considered to provide for general lighting and heating of water and buildings. • Water saving mechanisms should be considered for incorporation within the developments in order to further reduce water demands. • Re-use of treated wastewater should be considered wherever possible to reduce the consumption of potable water.	Proponent

4.3 CONSTRUCTION PHASE

The management actions listed in **Table 4-3** apply during the construction phase. This table may be used as a guide when developing EMPs for other construction activities within these development areas.

Table 4-3: Construction phase management actions

Environmental Feature	Impact	Management Actions	Responsible Person
EMP training	Contravention of EMP due to Lack of EMP awareness and the implications thereof.	All construction workers are to undergo EMP training that should include as a minimum the following: • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities.	Contractor, PR
Monitoring	EMP compliance/non-compliance	• Daily monitoring of EMP compliance is to be undertaken by the PR during construction. • Bi-annual audits are to be undertaken by an independent, suitably qualified consultant to audit the implementation of the EMP.	PR, ECO

Environmental Feature	Impact	Management Actions	Responsible Person
		• Audit reports to be submitted to MEFT bi-annually for auditing.	
Conservation of vegetation	Loss of biodiversity	• The layout and development design should incorporate existing trees[1]. • No trees to be removed from site. • Only a limited width +/- 5 m on the side of roads may be partially cleared of vegetation. • Workers are prohibited from collecting wood or other plant products on or near work sites. • No alien species may be planted on or near work areas.	Contractor
Lay-down areas and materials camp	Loss of biodiversity	Suitable locations for the contractors lay-down areas and materials camp should be identified with the assistance of the PR and the following should be considered in selecting these sites: • The areas designated for the services infrastructure should be used as far as possible. • Second option should be degraded land. • Avoid sensitive areas (e.g. rivers/drainage lines).	Contractor and PR

[1]a "tree" is defined as an indigenous woody perennial plant with a trunk diameter ≥150 mm.

Environmental Feature	Impact	Management Actions	Responsible Person
Hazardous waste	Contamination of surface and groundwater sources.	• All heavy construction vehicles and equipment on site should be provided with a drip tray. • All heavy construction vehicles should be maintained regularly to prevent oil leakages. • Maintenance and washing of construction vehicles should take place only at a designated workshop area.	Contractor
Water, Sewage and grey water	Contamination of surface and groundwater sources and water wasting	• The wash water (grey water) collected from the cleaning of equipment on-site should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. • Grey water should be recycled: ○ Used for dust suppression; ○ Used to water a vegetable garden, or to support a small nursery; ○ Used (reused) to clean equipment. • Grey water that is not recycled should be removed on a regular basis. • No dumping of waste products of any kind in or in close proximity to water bodies. • Heavy construction vehicles should be kept out of any water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with. • Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles. • Contaminated runoff from the construction sites should be prevented from entering the surface and ground water bodies. • All materials on the construction site should be properly stored. • Disposal of waste from the sites should be properly managed and taken to the designated landfill site in Okahandja. • Construction workers should be given ablution facilities at the construction sites that are located at least 30 m away from any surface water and ground water resources and should be regularly serviced. • Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment these should be done at an area properly suited and prepared to receive and contain polluted waters.	
General waste	Visual impact and soil contamination	• The construction site should be kept tidy at all times. • All domestic and general construction waste produced daily should be cleaned and contained daily.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. • All recyclable waste needs to be taken to the nearest recycling depot where practical. • A sufficient number of separate bins for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project.	
Topsoil	Loss of topsoil and associated opportunity costs	• When excavations are carried out, topsoil[2] should be stockpiled in a demarcated area. • Stockpiled topsoil should be used to rehabilitate post-construction degraded areas and/or other nearby degraded areas if such an area is located a reasonable distance from the stockpile.	Contractor
Rehabilitation	Visual impact	• Upon completion of the construction phase consultations should be held with the local community/property owner(s) regarding the post-construction use of remaining excavated areas (if applicable).	Contractor, PR

[2] Topsoil is defined here as the top 150mm of surface material, which accounts for the seedbank.

Environmental Feature	Impact	Management Actions	Responsible Person
		• In the event that no post-construction uses are requested, all excavated/degraded areas need to be rehabilitated as follows: ○ Excavated areas may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. ○ Rehabilitated excavated areas need to match the contours of the existing landscape. ○ The rehabilitated area should not be higher (or lower) than nearby drainage channels. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across excavated areas evenly. ○ Deep ripping of areas to be rehabilitated is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along slopes, not up and down a slope, which could lead to enhanced erosion.	
Road safety	Injury or loss of life	• Demarcate roads to be used by construction vehicles clearly. • Off-road driving should not be allowed. • All vehicles that transport materials to and from the site must be roadworthy.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	
Safety around work sites	Injury or loss of life	• Excavations should be left open for the shortest time possible. • Excavate short lengths of trenches and box areas for services or foundations in a manner that will not leave the trench unattended for more than 24 hours. • Demarcate excavated areas and topsoil stockpiles with danger tape. • All building materials and equipment are to be stored only within set out and demarcated work areas. • Only road construction personnel will be allowed within these work areas. • Comply with all waste related management actions stated above in this table.	Contractor
Ablutions	Non-compliance with Health and Safety Regulations	• Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: ○ 1 toilet for every 15 females.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		○ 1 toilet for every 30 males. ○ Sewage needs to be removed on a regular basis to an approved (municipal) sewage disposal site in Okahandja. ○ Alternatively, sewage may be pumped into sealable containers and stored until it can be removed. ○ Workers responsible for cleaning the toilets should be provided with environmentally friendly detergents, latex gloves and masks.	
Open fires	Injury or loss of life	• No open fires may be made anywhere on site.	Contractor
General health and safety	Injury or loss of life	• A fully stocked first aid kit should permanently be available on-site as well as an adequately trained member of staff capable of administering first aid. • All workers should have access to the relevant personal protective equipment (PPE). • Sufficient potable water reserves should be available to workers at all times. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• No workers should be allowed on site if under the influence of alcohol. • Building rubble and domestic waste should be stored in skips. • Condoms should be accessible/ available to all construction workers. • Access to Antiretroviral medication should be facilitated.	
Dust	Nuisance and health impacts	• Dust abatement measures should be implemented if dust levels are found to be significant during construction e.g. watering truck • The use of waterless dust suppression means (e.g. lignosulphonate products such as Dustex) should be considered. • Cover any stockpiles with plastic to minimise windblown dust. • Dust protection masks should be provided to workers if they complain about dust. • Vehicles travelling to and from the construction site must adhere to the speed limits to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
Noise	Nuisance impacts	Work hours should be restricted to between 08h00 and 17h00 and 7:30 – 13:00 on Saturdays where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. If an exception to this provision is required, all residents within the 500 m radius should be given 1 week's written notice.	Contractor
Recruitment of labourers	Negative conflict regarding recruitment	The Contractor should compile a formal recruitment process including the following provisions as a minimum: • Adhere to the legal provisions in the Labour Act for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.). • Recruitment should not take place at construction sites. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside these agreed upon procedures. • Contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those who are qualified and from the Okahandja project area and only then look to surrounding towns. • Clearly explain to all jobseekers the terms and conditions of their respective employment contracts (e.g. period of employment etc.) – make use of interpreters where necessary.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
Communication plan	Negative conflict with I&APs	The Contractor or proponent should draft a Communication Plan, which should outline as a minimum the following: • How Interested and Affected Parties (I&APs), who require ongoing communication for the duration of the construction period, will be identified and recorded and who will manage and update these records. • How these I&APs will be consulted on an ongoing basis. • Make provision for grievance mechanisms – i.e. how concerns can be lodged/ recorded and how feedback will be delivered as well as further steps of arbitration in the event that feedback is deemed unsatisfactory.	Contractor
General communication	Negative conflict with I&APs	• The PR must appoint an ECO to liaise between the Contractor, I&APs, Developer. • The Contractor shall at every weekly site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement the EMP awareness training as stipulated above in this table. • The Contractor must list the I&APs of the project and their contact details with whom ongoing communication would be required for the duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the PR before construction commences.	Contractor, ECO, PR

Environmental Feature	Impact	Management Actions	Responsible Person
		• The Communication Plan, once agreed upon by the Developer, shall be legally binding. • All communication with the I&APs must take place through the ECO. • A copy of the EMP must be available at the site office and should be accessible to all I&APs. • The Contractor should liaise with the Developer regarding all issues related to community consultation and negotiation before construction commences. • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the I&APs list should be informed about the availability of the complaints register and associated grievance mechanisms in writing by the PR prior to the commencement of construction activities.	
Archaeology	Loss of heritage resources	• Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, a "chance find" procedure should be applied in the order they appear below: ○ If operating machinery or equipment, stop work; ○ Demarcate the site with danger tape;	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		○ Determine GPS position if possible; ○ Report findings to the construction foreman; ○ Report findings, site location and actions taken to superintendent; ○ Cease any works in immediate vicinity; ○ Visit site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; ○ Inspect site and confirm addition to project GIS; ○ Advise the National Heritage Council of Namibia (NHCN) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: ○ Apply the chance find procedure as described above;	

Environmental Feature	Impact	Management Actions	Responsible Person
		○ Schedule a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHCN and Police; and ○ Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory.	

4.4 OPERATION AND MAINTENANCE PHASE

The management actions included in **Table 4-4** below apply during the operation and maintenance phase of these developments.

Table 4-4: Operation and maintenance management actions

Environmental Feature	Impact	Management Actions	Person Responsible
EMP training	Lack of EMP awareness and the implications thereof	All contractors appointed for maintenance work must ensure that all personnel are aware of necessary health, safety and environmental considerations applicable to their respective work.	Contractor
Outbreak of poultry diseases.	Chicken Health	• All chickens should originate from a closed bio-security compartment. • All chicks should originate from disease free sources. • Chicks from another farm should not be mixed with chickens in the flock. • Access control to and from the premises and access to the premises should only be by prior arrangement. • Never permit contaminated equipment from other poultry farms in the buildings. • Keep wild birds, rodents and predators away from the chicken coops. • Installation of rodent bait traps and flytraps.	

Environmental Feature	Impact	Management Actions	Person Responsible
Water	Surface and groundwater contamination	Ensure that surface run-off water accumulating on-site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment. High-pressure hoses should be used in the washing of the chicken coops, abattoir and equipment, to minimise the amount of water used. Do not dispose the wash water from cleaning the chicken coops and abattoir into the environment.	Proponent, Contractor,
Aesthetics	Visual impacts	The proponent should consult with a view to incorporate the relevant local/national/international development guidelines which addresses the following: • The incorporation of indigenous vegetation into development.	Proponent
Waste	Pollution	• Disposal of waste from the various activities should be properly managed. • The chicken coops must be dry cleaned efficiently to remove as much litter as possible and to reduce the amount of wash water used. • Solid waste must be collected and disposed of at an appropriate local landfill or an alternative approved site, in consultation with the local authority.	Proponent

Environmental Feature	Impact	Management Actions	Person Responsible
Noise	Noise pollution	• Continuous monitoring of noise levels should be conducted to make sure the noise levels does not exceed acceptable limits. • No activity having a potential noise impact should be allowed after 18:00 hours if possible. • The removal of manure will occur after every cycle to prevent accumulation on site, keeping the nutrient rich manure from polluting surface and groundwater bodies, avoiding offensive smells and ensuring the hygiene and health of the new flock.	Proponent

4.5 DECOMMISSIONING PHASE

The decommissioning of these developments is not foreseen as the intended development is envisaged to be permanent. In the event that this infrastructure development is decommissioned the following management actions should apply.

Table 4-5: Decommissioning phase management actions

Environmental Feature	Management Actions
Deconstruction activity	Many of the mitigation measures prescribed for construction activity for these developments (**Table 4-3** above) would be applicable to some of the decommissioning activities. These should be adhered to where applicable.

4.6 CONCLUSION

The actions included in this report aim to assist in the management, mitigation, or avoidance of negative impacts on the environment that may result from the proposed activities.

Should the measures recommended in this EMP be implemented and monitored, SPC is confident that the risks identified in the FESR can be reduced to acceptable levels.