

**ANNEXURE C:**

**ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

**FOR**

**THE PROPOSED TSUMKWE LANDFILL,**

**TSUMKWE SETTLEMENT**

**OTJOZONDJUPA REGION,**

**NAMIBIA**

**MARCH 2026**

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Meaning</b>
<b>ECC</b>	Environmental Clearance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EMP</b>	Environmental Management Plan
<b>ECO</b>	Environmental Control Officer
<b>ER</b>	Employer's Representative
<b>EAP</b>	Environmental Assessment Practitioner
<b>I&amp;APs</b>	Interested and Affected Parties
<b>MEFT</b>	Ministry of Environment, Forestry and Tourism
<b>MoHSS</b>	Ministry of Health and Social Services
<b>MAWLR</b>	Ministry of Agriculture, Water and Land Reform
<b>ORC</b>	Otjzondjupa Regional Council
<b>OHS</b>	Occupational Health and Safety
<b>PPE</b>	Personal Protective Equipment
<b>NDPs</b>	National Development Plans
<b>NDC</b>	Nationally Determined Contribution
<b>ERP</b>	Emergency Response Plan
<b>GN</b>	Government Notice

## **1. INTRODUCTION**

### **1.1. Background**

The Otjozondjupa Regional Council (hereafter referred to as the Proponent) proposes the development and operation of the Tsumkwe Settlement Landfill to provide an environmentally sound and sustainable waste management solution for the Tsumkwe Settlement and surrounding areas.

This Environmental Management Plan (EMP) has been prepared as part of the Environmental Impact Assessment (EIA) process and serves as a practical framework for managing, mitigating, monitoring, and reporting environmental and socio-economic impacts associated with the project. The EMP has been developed in accordance with the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulations, of 2012.

The EMP applies to all phases of the project lifecycle, including Planning, Construction, and Operation, and provides guidance on monitoring and rehabilitation measures to be implemented prior to Closure and Post-Closure, which will require a separate dedicated management plan.

This EMP is a legally binding document and forms part of the Environmental Clearance Certificate (ECC) issued by the competent authority. Compliance with the EMP is mandatory for the Proponent, appointed contractors, and landfill operators. Failure to comply may result in enforcement action in terms of the Environmental Management Act.

### **1.2. Location of the Project**

The proposed Tsumkwe Settlement Landfill is located approximately 1.8 km west of Tsumkwe Settlement within the Otjozondjupa Region, Namibia. The site is situated on communal land allocated for waste disposal purposes.

The location was selected based on wind direction, buffer from settlement occupied area, accessibility from the settlement, and its capacity to serve Tsumkwe and surrounding areas while minimising potential impacts on residential areas, sensitive environmental features, and wildlife movement corridors. The site falls within an ecologically sensitive area characterized by Kalahari sands, high-permeability soils, protected tree species, and active wildlife presence, including elephants and African wild dogs.

### **1.3. Description of the Proposed Site**

The proposed landfill site encompasses approximately 2 hectares, reduced from the initially proposed 30.62 hectares to minimise vegetation clearing, habitat fragmentation, and wildlife disturbance. The surrounding landscape is characterised by open communal land used primarily for grazing, with no permanent infrastructure located directly within the operational footprint.

The landfill will be developed as a controlled facility, incorporating basic environmental protection measures, including:

- Defined waste disposal cells;
- Wildlife-resistant perimeter fencing and controlled access;
- Internal access roads and stormwater management infrastructure;
- Leachate management and waste compaction procedures;
- Operational management and monitoring facilities.

The design and operation of the landfill will aim to minimise impacts on soil, groundwater, surface water, air quality, biodiversity, and public health, in accordance with national environmental standards, EIA recommendations, and international best practice.

#### 1.4. **Objectives of the Environmental Management Plan**

The objectives of this Environmental Management Plan are to:

- Ensure compliance with all applicable environmental legislation, regulations, permit conditions, and approval requirements;
- Prevent, minimise, and mitigate adverse environmental and socio-economic impacts associated with the landfill during all project phases;
- Protect soil resources, groundwater, surface water, air quality, biodiversity, and public health;
- Promote safe working conditions and occupational health and safety for all personnel involved in the project;
- Define clear roles, responsibilities, monitoring, and reporting requirements for effective environmental management;
- Facilitate effective stakeholder engagement and promote socio-economic benefits for the local community; and
- Recommend that a separate Closure and Post-Closure Management Plan be prepared to ensure environmentally acceptable closure and rehabilitation practices.

## 2. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

The implementation of the Environmental Management Plan (EMP) for the proposed Tsumkwe Settlement Landfill is the responsibility of the Otjozondjupa Regional Council (Proponent). Effective EMP implementation requires collaboration between the Proponent, contractors, landfill operators, and relevant government authorities to ensure sound environmental management throughout all project phases.

The institutional framework for the EMP includes the Project Proponent, Employer's Representative (ER), Environmental Control Officer (ECO), Contractors, Landfill Operator, Sub-contractors, Government Authorities, and the Environmental Assessment Practitioner (EAP). Their respective roles and responsibilities are outlined below.

### 2.1. Project Proponent - Otjozondjupa Regional Council

The Otjozondjupa Regional Council (ORC) holds ultimate responsibility for EMP implementation and environmental compliance. Key responsibilities include:

- Ensuring the EMP is implemented throughout the planning, construction, and operational phases, and guiding preparatory measures for closure and post-closure;
- Appointing competent contractors, sub-contractors, and landfill operators;
- Appointing an Employer's Representative (ER) and an Environmental Control Officer (ECO);
- Ensuring availability of adequate financial and human resources for environmental management;
- Ensuring compliance with the Environmental Clearance Certificate (ECC) conditions and statutory requirements;
- Overseeing stakeholder engagement and public liaison regarding environmental matters; and
- Retaining ultimate accountability for EMP implementation and compliance.

### 2.2. Employer's Representative (ER)

The ER is appointed by the Proponent to manage outsourced contracts during the planning, construction, operation, maintenance, and decommissioning phases. Key responsibilities include:

- Supervising all contractors and project activities on behalf of the Proponent;
- Appointing a competent Environmental Control Officer (ECO) to oversee EMP implementation;
- Ensuring environmental compliance through monitoring, reporting, and enforcement;
- Maintaining communication with contractors, sub-contractors, authorities, and Interested and Affected Parties (I&APs); and
- Assuming ECO responsibilities if no ECO is appointed.

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

The ECO acts as the Proponent's on-site representative, ensuring effective implementation of all environmental management measures. Responsibilities include:

- Monitoring and auditing compliance with the EMP;
- Conducting regular site inspections during construction and operation;
- Advising the Proponent, ER, and contractors on corrective and preventative actions;
- Maintaining records of environmental monitoring, inspections, incidents, and complaints;
- Liaising with authorities and I&APs regarding environmental matters;
- Assisting in obtaining necessary permits and authorisations;
- Verifying environmental awareness training for all personnel and recommending remedial action in cases of non-compliance;
- Advising on removal of non-compliant personnel or equipment;
- Recommending updates to the EMP as needed; and
- Supporting enforcement of environmental penalties or fines for non-compliance.

### 2.4. **Consultant (Planning and Design)**

The Planning and Design Consultant ensures the landfill is engineered to prevent long-term environmental risks and aligns with the Environmental and Social Assessment findings. Key responsibilities include:

- Ensuring landfill design complies with applicable environmental legislation, standards, and permit conditions;
- Integrating all mitigation measures identified in the EIA and EMP into engineering designs and specifications; and
- Reflecting environmental protection measures clearly in tender documentation and construction drawings.

### 2.5. **Contractor (Construction Phase)**

Construction contractors are responsible for implementing all construction-related mitigation measures outlined in the EMP. Responsibilities include:

- Ensuring compliance with EMP requirements and site rules;
- Providing environmental and occupational health and safety (OHS) training to all personnel;
- Enforcing the use of appropriate personal protective equipment (PPE);
- Reporting environmental incidents, spills, and non-compliance to the ECO;
- Maintaining records of training, inspections, and incidents;
- Incorporating EMP requirements in all sub-contracts; and
- Conducting environmental induction and awareness sessions for all new personnel in understandable languages.

## 2.6. **Landfill Operator (Operational Phase)**

The landfill operator is responsible for daily EMP implementation during operational, closure, and post-closure phases. Responsibilities include:

- Implementing all operational mitigation and monitoring measures;
- Ensuring proper waste acceptance, screening, and segregation;
- Preventing unauthorised access and scavenging;
- Reporting environmental incidents and public complaints to the Proponent and ECO;
- Conducting staff training on environmental management practices as needed;
- Implementing monitoring and nuisance control measures; and
- Maintaining health and safety standards.

## 2.7. **Sub-contractors**

Sub-contractors appointed at different project stages are required to comply with the EMP. Responsibilities include:

- Executing all activities in compliance with the EMP;
- Ensuring all personnel receive adequate environmental awareness training; and
- Maintaining records of training, inspections, and environmental compliance.

The Proponent and main contractors are responsible for ensuring that sub-contractors consistently adhere to the EMP.

## 2.8. **Government Authorities**

The following government bodies provide oversight and support for the project:

- Ministry of Environment, Forestry and Tourism (MEFT): Oversight of environmental compliance and enforcement;
- Ministry of Health and Social Services (MoHSS): Local inspections to ensure public health and compliance;
- Other relevant ministries: Providing technical support, supervision, and expertise where required;
- Pollution Control and Waste Management Authorities: Oversight of pollution control and waste management in accordance with legislation; and
- Community members: Reporting irregularities and environmental concerns.

## 2.9. **Environmental Assessment Practitioner (EAP)**

The EAP is responsible for:

- Conducting the EIA and submitting environmental reports to MEFT;
- Providing additional information to I&APs and authorities as required; and
- Updating the EMP based on EIA recommendations, changes in legislation, or project scope during the appointed period.

### 3. LEGAL REQUIREMENTS

As part of the implementation of this Environmental Management Plan (EMP, the Proponent shall comply with all applicable national legislation, policies, and regulatory frameworks governing environmental protection, waste management, public health, occupational safety, land use, and natural resource protection in Namibia.

Compliance with these legal instruments is mandatory throughout all phases of the Tsumkwe Landfill project, including planning, construction, operation, closure, and post-closure. The legislation listed below provides the statutory basis for environmental authorisation, operational controls, monitoring requirements, and enforcement mechanisms relevant to the project.

*Table 1 Applicable National Laws Relevant to the Tsumkwe Landfill Project*

<b>THEME</b>	<b>LEGISLATIVE / POLICY INSTRUMENT</b>	<b>KEY PROVISIONS</b>	<b>EMP COMPLIANCE REQUIREMENTS FOR TSUMKWE LANDFILL</b>
Constitutional & Environmental Governance	Namibian Constitution	Article 95(l): State shall promote ecosystem integrity, sustainable use of natural resources, and environmental protection for present and future generations.	Ensure sustainable landfill design, pollution prevention, groundwater protection, and rehabilitation measures aligned with constitutional environmental protection principles.
	Environmental Management Act 7 of 2007	Section 27: Listed activities require Environmental Clearance Certificate (ECC). Section 3: Environmental principles. Sections 2(b-c): Public participation.	Maintain valid ECC at all times. Implement all ECC conditions. Ensure environmental monitoring, reporting, and adherence to approved EMP. Maintain public consultation records and grievance mechanism.
	Environmental Impact Assessment Regulations (GN 30 of 2012)	Scoping, EIA reporting, alternatives assessment, and public consultation requirements.	Implement approved mitigation measures. Maintain environmental compliance register. Submit required reports to the Environmental Commissioner.
Solid Waste Management	Pollution Control and Waste Management Bill (Pending)	Integrated waste management, licensing of disposal facilities, hazardous waste control.	Design and operate landfill according to best practice standards (engineered cells, access control, waste classification, hazardous waste exclusion unless licensed).
	National Solid Waste Management Strategy (2018-2028)	Waste hierarchy; controlled landfill development; environmental protection.	Promote waste separation, recycling initiatives, and controlled disposal. Prohibit open dumping and uncontrolled burning.

	Hazardous Substances Ordinance No. 14 of 1974	Controls manufacture, storage, handling and disposal of hazardous substances.	Proper storage of fuels and hydrocarbons during construction. Spill prevention and response plan required. Hazardous waste to be stored and disposed of at licensed facilities.
Public Health & Occupational Safety	Public Health Act 36 of 1919	Section 119: Prohibits nuisances injurious to health.	Implement odour control, litter management, vector control, dust suppression, and stormwater drainage. Prevent groundwater contamination affecting communities.
	Labour Act 11 of 2007	Working conditions and occupational health and safety provisions.	Ensure safe working environment, training, PPE provision, safe machinery operation, and reporting of workplace incidents.
	Health and Safety Regulations (GN 156 of 1997)	Occupational exposure standards and workplace safety requirements.	Provide sanitation facilities, first aid, fire-fighting equipment, and enforce PPE usage on site.
Water Resources Protection	Water Act 54 of 1956	Section 21: Effluent disposal permit required. Section 23: Prohibits water pollution.	Install leachate management system. Prevent discharge of contaminated water. Conduct groundwater monitoring. Obtain necessary permits if discharge occurs.
	Water Resources Management Act 11 of 2013	Sustainable water resource management and groundwater protection.	Align monitoring and groundwater protection measures with national water resource standards once fully operational.
Air Quality & Climate	Atmospheric Pollution Prevention Ordinance 11 of 1976	Dust, smoke and noxious gas control.	Implement dust suppression (water spraying, speed limits). Prohibit open burning. Monitor windblown litter.
	National Climate Change Policy (2011) & Namibia NDC	Climate adaptation and mitigation obligations.	Incorporate stormwater control, fire prevention, methane management, and climate-resilient cell design.
Land Use & Governance	Communal Land Reform Act 5 of 2002	Regulates communal land allocation and land use rights.	Maintain proof of land allocation approval from Traditional Authority. Ensure land use remains consistent with approved purpose.

	Local Authorities Act 23 of 1992	Waste service provision and by-law enforcement.	Upon establishment of local authority jurisdiction, ensure landfill complies with municipal waste management by-laws.
	Regional Councils Act 22 of 1992	Regional planning and infrastructure oversight.	Coordinate with Otjozondjupa Regional Council on compliance reporting and infrastructure planning.
Biodiversity & Vegetation	Forest Act 12 of 2001	Protection of listed tree species; permits for vegetation removal; 100m watercourse buffer.	Obtain vegetation clearance permits if required. Avoid removal of protected species. Maintain buffer zones around drainage lines.
	Nature Conservation Ordinance 4 of 1975	Protection of indigenous fauna and flora.	Prevent attraction of wildlife through proper waste covering. Avoid disturbance to sensitive species.
Heritage Resources	National Heritage Act 27 of 2004	Section 48: Permit required for disturbance of heritage resources; chance finds procedure.	Implement chance finds procedure during construction. Stop work and notify National Heritage Council if graves or artefacts are discovered.
Traffic & Infrastructure	Roads Ordinance 17 of 1972	Road reserve protection and access control.	Maintain approved access points. Prevent damage to public roads from heavy vehicles. Implement traffic management plan.
Disaster Risk & Emergency Management	Disaster Risk Management Act 10 of 2012	Disaster risk identification, mitigation and emergency preparedness.	Develop and implement Emergency Response Plan (ERP) covering fires, flooding, hazardous spills, and extreme weather events. Coordinate with regional disaster authorities.
Development Planning Framework	Vision 2030 & National Development Plans (NDPs)	Sustainable development, infrastructure expansion, environmental protection.	Align landfill operations with national service delivery and sustainability objectives. Promote environmentally responsible waste management practices.
Environmental Health & Sanitation Governance	Environmental Health Regulations / Local Waste By-laws	Sanitation, waste handling, nuisance control.	Implement hygiene protocols, pest control, daily waste covering, and community complaint mechanism. Ensure compliance once local by-laws are enacted.

#### 4. IMPLEMENTATION OF THE ENVIRONMENTAL MANAGEMENT PLAN

The Otjozondjupa Regional Council (ORC), as the Proponent, shall be responsible for the implementation of this Environmental Management Plan (EMP) for the proposed Tsumkwe Settlement Landfill.

The EMP provides a structured framework to manage, mitigate, and monitor environmental and social impacts identified in the Environmental Impact Assessment (EIA), taking into account the specific sensitivities of Tsumkwe, including:

- Highly permeable Kalahari sandy soils;
- Heavy reliance on groundwater resources;
- Presence of protected tree species, and active wildlife movement corridors (including elephants and African wild dogs);
- Proximity to communal conservancy and the animal breeding station.
- Limited institutional capacity in a remote settlement context.

Given the ecological sensitivity of the Nyae Nyae area and the socio-economic vulnerability of the community, strict adherence to this EMP is mandatory. The successful implementation of the EMP requires coordination between, Otjozondjupa Regional Council (Proponent), Environmental Control Officer (ECO), Design Consultant, Construction Contractor, Landfill Operator, Relevant authorities (MEFT, MAWLR, MOHSS, Nyae Nyae Conservancy representatives etc.).

##### 4.1. Management Plan - Planning and Design Phase

The planning and design phase is the most critical stage for long-term environmental protection in Tsumkwe. Decisions made during this phase determine the level of groundwater protection, wildlife compatibility, and operational sustainability. Given the hydrogeological vulnerability of the Kalahari sands, groundwater protection is the primary environmental constraint for this development.

Table 2 Management Plan - Planning and Design Phase

<b>Environmental Impacts</b>	<b>Mitigation Measures</b>	<b>Roles &amp; Responsibilities (Implementation)</b>	<b>Roles &amp; Responsibilities (Monitoring)</b>
Inappropriate site layout affecting pans and recharge zones	Micro-site infrastructure within the already cleared $\pm 2$ ha footprint; avoid pans, drainage depressions and recharge areas	Design Consultant	Proponent / ECO
Groundwater contamination risk (highly permeable sands)	Incorporate engineered composite liner; leachate collection system; lined evaporation pond	Design Consultant	Proponent / ECO / MAWLR
Disruption of wildlife corridors (elephants, African wild dogs)	Reduce footprint from $\pm 30.62$ ha to $\pm 2$ ha; incorporate elephant-resistant perimeter fencing;	Design Consultant	Proponent / ECO / MEFT
Loss of protected tree species	Avoid protected trees (combretum imberebe) where feasible; obtain forestry permits if removal required; integrate offset planting,	Design Consultant	Proponent / MEFT Forestry Division
Flooding and extreme storm events	Design stormwater diversion berms; separate clean and dirty water systems; size infrastructure for extreme rainfall events	Design Consultant	Proponent / ECO
Visual intrusion in natural Kalahari landscape	Use berms and buffer zones; progressive cell development; maintain low profile design	Design Consultant	Proponent
Institutional capacity gaps	Define staffing structure; secure operational budget; prepare preliminary Closure & Post-Closure Plan	ORC	ORC / ECO

#### 4.2. Management Plan - Construction Phase

Construction impacts in Tsumkwe are primarily related to vegetation clearing, dust generation, wildlife disturbance, and soil erosion. Given slow natural regeneration rates in Kalahari woodland, clearing must be strictly controlled. Clearing shall be limited to the ±2 ha footprint only.

Table 3 Proposed Mitigation Measures - Construction Phase

Environmental Impacts	Mitigation Measures	Roles & Responsibilities (Implementation)	Roles & Responsibilities (Monitoring)
Vegetation clearing and habitat loss	Demarcate footprint; prohibit unnecessary clearing; protect retained trees; no hunting or killing of wildlife	Contractor	Proponent / ECO / MEFT
Soil disturbance and erosion	Restrict machinery to designated areas; install temporary stormwater controls; rehabilitate disturbed areas progressively	Contractor	Proponent / ECO
Wildlife disturbance (elephants, wild dogs)	Restrict work to daylight hours; environmental awareness training; no food waste should be left on site	Contractor	ECO / Conservancy
Dust generation (semi-arid conditions)	Water exposed areas; speed control on access roads; cover stockpiles	Contractor	MEFT / ECO
Fuel and chemical spills (groundwater risk)	Store fuels in bunded areas; spill kits on site; no refuelling near drainage depressions	Contractor	Proponent / MAWLR
Construction waste	Provide waste bins; no littering; dispose at approved facility	Contractor	ORC
Worker sanitation	Minimum 1 toilet per 25 workers; maintain hygienic facilities	Contractor	ORC
Heritage chance finds	Stop work immediately; notify National Heritage Council; secure area	Contractor	ECO / ORC
Occupational health & safety	Mandatory PPE; toolbox talks; appoint safety officer; first aid on site	Contractor	ORC / ECO
Social conflict over employment	Transparent recruitment; prioritise local (San) community especially for unskilled labour	ORC / Contractor	ORC

## Construction Phase Notes

- Clearing must not expand beyond approved boundary.
- No disturbance of nearby pans or fossil drainage lines.
- Strict prohibition of wildlife harassment.
- All machinery must be maintained to prevent oil leaks.
- Community engagement shall continue during construction.

### 4.3. Management Plan - Operational Phase

The operational phase carries the highest environmental risk, particularly regarding groundwater contamination, wildlife interaction, and institutional sustainability.

*Table 4 Proposed Mitigation Measures - Operational Phase*

Environmental Impacts	Mitigation Measures	Roles & Responsibilities (Implementation)	Roles & Responsibilities (Monitoring)
Groundwater contamination from leachate	Maintain liner integrity; operate leachate collection; quarterly groundwater monitoring; report results	Landfill Operator	Proponent / MAWLR / NAMWATER
Surface water contamination	Maintain stormwater diversion berms; inspect after rainfall events	Operator	ECO
Attraction of scavengers and wildlife	Elephant-resistant fencing; locked gate; weekly waste cover or when needed; no open burning	Operator / ORC	ECO / MEFT
Disruption of wildlife corridors	Maintain secure fencing; prevent expansion beyond 2 ha; monitor wildlife movement with conservancy	ORC / Operator	ECO / Conservancy
Dust and windblown litter	Litter fencing; sand/soil cover; routine clean-ups; windbreaks	Operator	ORC
Odour nuisance	Compact waste; apply cover	Operator	ECO
Fire hazard	No open burning; maintain firebreak	Operator	ORC
Waste acceptance control	Inspect incoming waste; maintain register; reject hazardous or medical waste	Operator	ORC / MEFT / MOHSS

Public health risks	Vector control; secure access; awareness campaigns	ORC / Operator	MOHSS
Institutional capacity strain	Annual environmental audit; staff training; secured operational budget, Secure sufficient operational budget for environmental management	ORC	Independent Auditor / ECO
Community complaints	Maintain grievance register; respond within 7 days; include in bi-annual reports	ORC / Operator	ECO
Rehabilitation of existing dumpsite	Remove legacy waste;	ORC	MEFT / ECO

### Operational Notes

- Access Control and Wildlife Protection of Full perimeter elephant-resistant fencing and controlled operating hours to avoid informal scavenging.
- Leachate and Groundwater Protection by designing and constructing an Engineered composite liner system with Leachate collection and lined evaporation pond.
- Waste should be deposited in defined cells, and Compaction, Sand/soil cover applied depending on waste volumes.
- Control dust, litter, odour, pests, birds, by Maintain strict housekeeping at all times.
- Health and Safety by mandatory PPE, Emergency response procedures maintained, and Fire prevention plan in place.

#### 4.4. Closure and Post-Closure Management

Upon reaching its design capacity, the landfill shall be closed in accordance with an approved Closure Plan. The objective is to restore environmental stability and enable potential beneficial after-use, subject to regulatory approval and safety considerations. The final land use shall be determined in consultation with authorities and the community. Closure measures shall include Conducting a closure assessment and install final capping layers. Post-closure monitoring shall continue for a period to be determined by MEFT.

## 5. ENVIRONMENTAL MANAGEMENT REQUIREMENTS

This chapter sets out the binding Environmental Management Requirements for the Tsumkwe Settlement Landfill. It consolidates mitigation measures, operational controls, compliance monitoring, reporting obligations, auditing requirements, enforcement mechanisms, and long-term environmental safeguards applicable to all phases of the project lifecycle.

These requirements are legally binding in terms of the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulations, 2012, and form part of the conditions of the Environmental Clearance Certificate (ECC) issued by the Ministry of Environment, Forestry and Tourism (MEFT).

Given the ecological sensitivity of the area, the highly permeable Kalahari soils, dependence on groundwater resources, and presence of active wildlife corridors, strict compliance with this chapter is mandatory.

### 5.1. Environmental Awareness and Training and Capacity Building

All personnel, contractors, landfill operators, and sub-contractors shall undergo mandatory EMP induction training prior to commencing work. Refresher training shall be conducted at least annually and whenever significant operational changes occur.

Training shall include:

- Overview of the EMP and ECC conditions
- Site-specific environmental sensitivities (Kalahari sands, groundwater reliance, wildlife corridors)
- Waste acceptance and hazardous waste exclusion procedures
- Groundwater protection, leachate management and spill response
- Wildlife interaction protocols (elephants, African wild dogs)
- Fire prevention and emergency response
- Dust, odour and litter control
- Occupational health and safety requirements (PPE, first aid, reporting procedures)
- Community grievance and complaint handling procedures

Environmental awareness materials shall be provided in locally understandable languages, and particular attention shall be given to capacity-building of locally recruited personnel.

The Environmental Control Officer (ECO) shall maintain detailed training records, including attendance registers, training materials, dates, and trainer details.

## 5.2. **Record-Keeping and Documentation**

The following records shall be maintained:

- EMP training records;
- Waste acceptance logs;
- Inspection and audit reports, and Monitoring results;
- Incident and complaint registers, and corrective action reports;
- Maintenance and emergency response records;
- Correspondence with authorities and Interested and Affected Parties (I&APs).

All records shall be retained for a minimum of two (2) years after project completion or longer if required by the competent authority.

## 5.3. **Environmental Reporting**

The Proponent shall:

- Compile monthly monitoring reports during construction, and quarterly during operation;
- Document incidents and corrective actions;
- Submit bi-annual compliance reports to MEFT as required;
- Prepare a project completion environmental performance report;
- Make relevant reports available to stakeholders upon request.
- Monitoring reports shall include, wildlife interaction records, complaints received, corrective actions implemented, and audit findings.

## 5.4. **Non-Compliance, Enforcement, and Corrective Action**

- The EMP shall become legally binding upon approval of project and issue of ECC by MEFT.
- All non-compliance incidents shall be recorded in a dedicated register.
- Immediate corrective actions shall be implemented.
- Repeated or serious non-compliance may result in contractual penalties or regulatory enforcement in accordance with the Environmental Management Act, Act, 7 of 2007.
- Continuous supervision shall ensure adherence to EMP specifications.

## 5.5. **Review and Continuous Improvement**

This EMP shall be reviewed periodically to ensure effectiveness and legal compliance. Updates may be made to reflect Operational change and monitoring results. Any significant amendments shall be submitted to MEFT for approval where required by the ECC.

## 6. CONCLUSION

The proposed Tsumkwe Landfill Project represents a critical infrastructure initiative aimed at improving waste management services within Tsumkwe Settlement and the surrounding areas. Through the implementation of this Environmental Management Plan (EMP), the Otjozondjupa Regional Council demonstrates its commitment to be environmentally responsible by practicing, sustainable waste management and protect natural resources and public health.

This EMP provides a structured and legally enforceable framework for the prevention, mitigation, monitoring, and management of environmental and socio-economic impacts throughout the planning, construction, and operational phases, while it recommends a separate study for, closure and post-closure phases of the landfill. Particular emphasis has been placed on groundwater protection, waste screening and control, nuisance management, protection of flora and fauna, occupational health and safety, and stakeholder engagement. Successful implementation of this EMP will depend on:

- Strong institutional coordination and clear allocation of responsibilities;
- Adequate financial and human resource allocation;
- Continuous monitoring, auditing, and reporting;
- Ongoing environmental awareness and capacity building; and
- Transparent communication with authorities and the local community.

The EMP forms an integral part of the Environmental Clearance Certificate (ECC) and is binding on the Proponent, contractors, landfill operators, and all associated parties. Compliance with its provisions will ensure that the Tsumkwe Landfill operates in accordance with national environmental legislation and best practice standards, thereby minimising environmental risks and promoting long-term sustainability.

The proposed Tsumkwe Landfill Project can be developed and operated in an environmentally acceptable and socially responsible manner, contributing positively to improved sanitation, environmental protection, and service delivery within the region, provided that all mitigation measures and monitoring requirements outlined in this EMP are effectively implemented and enforce.