Environmental Management Plan for the Proposed Drilling of a Borehole for Water Supply at Luhamoho Conservation Agriculture Project in Kwandu Conservancy, Zambezi Region.

Prepared by	**PROPONENT**
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1. Acronyms

List of Acronyms

- **CLD-HWCM** – Community Livelihood Development and Human-Wildlife Conflict Mitigation
- **EMP** – Environmental Management Plan
- **EMA** – Environmental Management Act
- **MEFT** – Ministry of Environment, Forestry, and Tourism
- **MAWLR** – Ministry of Agriculture, Water, and Land Reform
- **PPE** – Personal Protective Equipment

2. Environmental Management Plan (EMP)

2.1 Introduction

The Kwandu Conservancy borehole Environmental Management Plan (EMP) is designed to provide a structured approach to minimising and addressing environmental risks associated with borehole drilling and water abstraction. It establishes a framework for impact mitigation, monitoring, and compliance to ensure sustainable water resource management while reducing negative environmental and social consequences.

2.2 Legal Framework and Compliance

This EMP operates under the Environmental Management Act, 2007 (Act No. 7 of 2007) (EMA), which mandates that water resource development activities must comply with environmental regulations. Kwandu Conservancy, in partnership with the Community Livelihood Development and Human-Wildlife Conflict Mitigation (CLD-HWCM) Project, is responsible for adhering to these legal requirements. Compliance ensures that borehole operations do not compromise environmental integrity or community well-being.

3. Roles and Responsibilities

3.1 Project Proponent

The Kwandu Conservancy, with support from the CLD-HWCM Project, is the key entity responsible for implementing and enforcing the EMP for the Luhamoho project.

3.2 Site Manager (SM)

The SM serves as the liaison between workers, management, and regulatory bodies regarding EMP enforcement and compliance.

3.3 Conservancy Workers and Community Beneficiaries

All individuals involved in borehole-related activities, including conservancy employees and local community members who benefit from the project, must follow EMP guidelines. Their active participation is essential for maintaining environmental sustainability and operational efficiency.

3.4 Regulatory Oversight

Government-appointed compliance officers, operating under the Ministry of Environment, Forestry, and Tourism (MEFT), are tasked with monitoring, auditing, and enforcing adherence to the EMP. These officials conduct routine assessments to ensure that borehole operations align with Namibia's environmental laws and best practices. The Ministry of Agriculture, Water, and Land Reform (MAWLR)**, under the** Water Resources Management Act 11 of 2013**,** is responsible for regulating, protecting, and managing water resources to ensure sustainable use and conservation. It oversees water service monitoring and enforces compliance with abstraction limits set by water permits to maintain aquifer health.

3.5 Punitive Measures

This EMP is a legally enforceable document, and failure to comply may result in penalties as stipulated under the provisions of the EMA.

4. The EMP Plan

This EMP is divided into two sections: the construction and operational phases, focusing on monitoring and assessing mitigation measures for socio-economic, bio-physical, and heritage resource impacts. As a dynamic document, it may be updated as necessary to enhance environmental protection.

4.1 Environmental Management Plan Logical Framework

Table 1. EMP logical framework

Environmental Management Plan (EMP)					
A. Drilling Phase					
Cluster	**Impact**	**Objective**	**Mitigation Measures**	**Monitoring Indicators**	**Responsible**
Socio-Economic Considerations	Conflicts Over Water Use	Ensure equitable water access for all stakeholders	Engage local communities and authorities before drilling; establish clear water use agreements	Signed agreements and feedback from community meetings	Kwandu Conservancy
Health and Safety Concerns	Air and Noise Pollution from Drilling	Minimize air and noise pollution during drilling activities	Use dust suppression methods; limit drilling hours; provide PPE for workers	Air quality reports; noise level assessments; PPE availability	Kwandu Conservancy
Biophysical Considerations	Soil Erosion and Land Degradation	Prevent soil degradation around drilling sites	Implement erosion control measures such as vegetation barriers and silt traps	Presence of erosion control measures	Kwandu Conservancy

Biophysical Considerations	Disruption of Wetlands and River Systems	Maintain natural water flow to support biodiversity	Avoid drilling near wetlands; conduct hydrological assessments before site selection	Hydrological impact assessment reports	Kwandu Conservancy
Heritage Resources	Damage to Archaeological Sites	Preserve cultural and historical heritage	Conduct heritage assessments before drilling; report findings to the National Heritage Council	Heritage assessment reports; incident reports to authorities	Kwandu Conservancy
B. Operational Phase					
Cluster	**Impact**	**Objective**	**Mitigation Measures**	**Monitoring Indicators**	
Socio-Economic Considerations	Theft of Borehole Infrastructure	Ensure security of borehole installations	Implement fencing and security measures; involve community in monitoring	Incident reports; presence of security measures	Kwandu Conservancy
Socio-Economic Considerations	Reduced Livestock Attacks by Predators	Improve livestock safety and minimize predator conflict	Position boreholes near settlements; install protective fencing around water points	Reduction in reported livestock losses	Kwandu Conservancy

Health and Safety Concerns	Water Contamination	Ensure safe drinking water for communities	Regular water quality testing; proper borehole sealing	Water quality test results; sanitation practices	Kwandu Conservancy
Health and Safety Concerns	Spread of Communicable Diseases	Minimize disease transmission in borehole areas	Community awareness campaigns; provision of sanitation facilities	Health reports; community engagement records	Kwandu Conservancy
Biophysical Considerations	Groundwater Depletion	Sustain groundwater levels for long-term use	Monitor abstraction rates; implement water conservation measures	Groundwater level monitoring records	Kwandu Conservancy
Biophysical Considerations	Infrastructure by Damage Elephants	Prevent damage to borehole infrastructure by wildlife	Install elephant deterrents such as chili fences and reinforced structures	Incident reports; functionality of deterrent measures	Kwandu Conservancy
Biophysical Considerations	Destruction of Trees	Reduce deforestation and habitat loss	Minimize tree clearing; implement reforestation programs	Number of trees replanted; satellite imagery	Kwandu Conservancy
Heritage Resources	Heritage and Archaeology Risks	Protect cultural and historical artifacts	Report findings to relevant authorities; halt work if artifacts are discovered	Reports to heritage authorities; documentation of findings	Kwandu Conservancy

5. Decommissioning and Rehabilitation Plan

The decommissioning phase aims to minimize environmental risks when a borehole is no longer in use. Key steps include:

- **Sealing:** Boreholes should be properly sealed with cement or bentonite to prevent groundwater contamination.
- **Infrastructure Removal:** All pipes, pumps, and solar panels must be dismantled and removed.
- **Land Restoration:** The site should be levelled, vegetation replanted, and natural drainage restored.

Responsibilities

- The proponent (Kwandu Conservancy) oversees and funds decommissioning.
- The Environmental Compliance Officer ensures adherence to regulations.

Monitoring and Evaluation

- Regular assessments should confirm site safety and environmental stability.
- Groundwater quality testing ensures no contamination of the aquifer.

6. Recommendation and Conclusion

6.1 Recommendation

Stakeholder Collaboration: Continued engagement with the Ministry of Agriculture, Water and Land Reform (MAWLR), Ministry of Environment, Forestry and Tourism (MEFT), and other key stakeholders should be maintained to ensure compliance and support.

6.2 Conclusion

The borehole installation project is a crucial initiative to enhance water accessibility, improve livelihoods, and support agricultural productivity in the community. While the project has significant benefits, it also presents environmental and socio-economic challenges that require careful management. With proper implementation of the Environmental Management Plan (EMP), sustainable water abstraction practices, and strong stakeholder engagement, the borehole project can contribute to long-term water security and socio-economic development in the region.

6.3 Declaration for the Submission of Assessment Reports

ANNEXURE 1
FORMS

Form 1

REPUBLIC OF NAMIBIA

ENVIRONMENTAL MANAGEMENT ACT, 2007

(Section 32)

APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE

Revenue stamp or revenue franking machine impression

PART A: DETAILS OF APPLICANT

1. Name: (person or business) Kwandu Conservancy
2. Business Registration / Identity No. (if applicable) Gazette 2238 number 261
3. Correspondence Address: P.O Box 8075 Ngweze
4. Name of Contact Person: Basson Kakuwe
5. Position of Contact Person: Chairperson
6. Telephone No.: 0814472029
7. Fax No.:
8. E-mail Address : (if any) bsanzila@gmail.com

☐ Tick (☐) the appropriate box

PART B: SCOPE OF THE ENVIRONMENTAL CLEARANCE CERTIFICATE

1. The environmental clearance certificate is for:

☐ Drilling of borehole and irrigation of 1 hectare plot
☐
☐

2. Details of the activity(s) covered by the environmental clearance certificate:

[Note: Please attach plans to show the location and scope of the designated activity(s), and use additional sheets if necessary:

Title of Activity: Drilling
Nature of Activity: 1 hectare conservation agriculture plot
Location of Activity: Mwanzi / Ikwandu
Scale and Scope of Activity: Low

PART C: DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the environmental clearance certificate may be suspended, amended or cancelled if any information given above is false, misleading, wrong or incomplete.

Signature of ~~Applicant~~	BRIGHT N. SANZILA	P. COORDINITOR
	Full Name in Block Letters	Position

on behalf of IKWANDU CONSERVANCY 02/04/2025
Date