



ZIMBABWE

MINISTRY OF LANDS, AGRICULTURE, FISHERIES, WATER AND RURAL

DEVELOPMENT

DEPARTMENT OF WATER RESOURCES DEVELOPMENT AND UTILISATION

ESMP FOR GROUNDWATER MONITORING SYSTEM IN THE SAVE ALLUVIAL AQUIFER OF ZIMBABWE

Project Location: **Zimbabwe, Manicaland Province (Middle – Sabi)**

SCOPE: Modernising the Groundwater monitoring System through Installation of a Real-Time Telemetry System

Contractor Details: **Contractor not in place**



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Zimbabwe Environmental and Social Management Plan (ZESMP)

	<p>The project scope seeks mainly to modernize an existing monitoring network and capitalize on existing boreholes. It is an intervention for the government and water users regarding sustainable groundwater management and utilization.</p> <p>Since the project aims to utilize existing boreholes, no significant harm is expected to the environment, and no local residents will be expected to relocate.</p> <p>The contractors will carry out central installations and constructions on a Fix-and-Supply Basis. This means no significant labor recruitments from the Department of Water and ZINWA will be considered in these operations.</p> <p>However, training and workshops will be held to capacitate all technicians and local stakeholders, especially on the operation and maintenance of the monitoring system.</p>	<p>Onsite inspection will be carried out by the Department of Water and Zimbabwe National Water Authority (ZINWA)</p>	<p>Responsibility:</p> <p>Contractors will be hired to construct and install all the required equipment.</p> <p>Both the Ministry Department and ZINWA will be responsible for monitoring and verification. Technicians from ZINWA and a technical team from the Department will be onsite during and after the installation of any project-related equipment.</p>	<p>The Department of Water is responsible for the overall monitoring of the project.</p> <p>ZINWA has on-site technicians who are responsible for day-to-day monitoring.</p> <p>Technicians submit progress reports every week to the Department of Water.</p> <p>The Department has hydrogeologists and engineers dedicated to conducting monthly visits to monitor the project.</p> <p>The Department's technical team is also responsible for submitting progress reports on Monitoring and Evaluation to SADC-GMI.</p>
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Item	Mitigation, Management, and Enhancement Measures	Means of Verification	Responsibility	Monitoring Procedure
A. General Requirements for ESHS Management				
<u>Responsibilities and Liabilities</u>	Ensure that all workers, suppliers, and possible subcontractors are familiar with and comply with ESMP's ESHS requirements and specifications.	Induction training performed and recorded. Contracts with subcontractors and suppliers	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review of training records Review of Contracts to ensure that Project requirements are included
	Identify if further Management Plans have to be prepared.	Compliance with the mitigation measures outlined in this ESMP.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review prior to finalization of Project-specific ESMP.
<u>Resources allocated to ESHS Management</u>	Assign ESHS responsible staff ¹ and define the requirements and responsibilities, including the role of stakeholder engagement.	Compliance with the mitigation measures outlined in this ESMP. Inform the relevant authorities about the ESHS that is responsible.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review prior to finalization of Project-specific ESMP.
<u>Reporting</u>	Reporting of progress and incidents, accidents, observations, and near misses.	Compliance with the mitigation measures outlined in this ESMP. Reporting protocol for ESHS incidents	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review once prior to finalization of Project-specific ESMP.

¹ Note: in many legislations an ESHS manager is required on sites employing 50 workers or more



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A. General Requirements for ESHS Management				
Code of Conduct	Adopt and implement a Code of Conduct in accordance with WB ESF, SADC GMI Sub-grantee Manual, national legislation, safety rules, substance abuse, environmental sensitivity, communicable diseases, gender issues (sexual harassment), respect for local beliefs and customs, community interactions, etc.	Code of Conduct in place and rules shared with personnel (as per Recruitment Policy)	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review of Code of Conduct induction records Review of reported punishable or misconduct behaviour. Review of grievance records.
<u>ESHS Training</u>	Provide H&S induction and training and raise awareness among the workforce regarding H&S risks and mitigation measures (including indirect workers) tailored to the Project scope.	Training performed and recorded.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review of training records

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B. Protection of the Environment				
Protection of adjacent areas	Restrict excavation activities during periods of intense rainfall. Use temporary binding to reduce the risk of sediment, oil, or chemical spills into the receiving waters.	Site inspections, field visits Supervisory checklist developed by the Contractor and approved by ZINWA Unsuccessful boreholes backfilled	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Inspect the site conditions prior to and during excavation.



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B. Protection of the Environment				
	<p>Ensure that means of protection are in place to avoid or minimize adverse effects on vegetation, soils, groundwater and surface water, biodiversity, natural drainage, and the water quality in areas within the works area.</p> <p>Construction methods to minimize impacts to the extent possible.</p>	<p>Excavation on hold during intense rainfall</p> <p>No impacts were identified in the adjacent environment</p> <p>Supervisory checklist developed by the Contractor and approved by ZINWA</p>	<p>Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.</p>	<p>Regular supervision (including monitoring of adjacent natural resources).</p>
	<p>Ensure that work site boundaries and limits are in accordance with plans agreed upon in advance.</p> <p>All construction activities should be carried out within boundaries.</p>	<p>Marking the borders of the works site using danger tape</p> <p>Inform the immediate community of the borders of the work site.</p>	<p>Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.</p>	<p>Site inspection before the commencement of activities and Regular supervision.</p>
	<p>Ensure to stay out of surrounding wetland areas.</p>	<p>Site inspections</p> <p>Supervisory checklist developed by the Contractor and approved by ZINWA</p> <p>Pre-construction survey</p>	<p>Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.</p>	<p>Site inspection prior to commencement of activities; and Regular supervision</p>
	<p>Ensure minimum distances from permanent watercourses and outside of floodable areas; sensitive urban services and buildings (health center, school, water supply for populations, and housing).</p>	<p>Marking the borders of works site boundaries in line with given limits and usage of warning signs</p>	<p>Department of Water Resources Development and Utilisation, ZINWA</p>	<p>Site inspection prior to commencement of works and Regular supervision</p>

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B. Protection of the Environment				
			Groundwater Section.	
	After construction, form reshaped land so that it is inherently stable, adequately drained, suitable for the desired long-term land use, and allows the natural regeneration of vegetation.	Visual inspection and comparison with adjacent undisturbed areas.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection before and after completion of works
Pollution prevention	Ensure all works carried out minimize pollution risk (e.g., liquid effluents, air emissions, noise and vibration management, vehicle and equipment maintenance and selection, fuel, oil, and chemical storage and handling) throughout the project's duration.	Ensure that potential pollutants are not stored and handled within 50 m of sensitive receptors (particularly watercourses). Ensure that potential pollutants are safely stored, i.e., stored above the catch pan.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection prior and during the commencement of works
General and Construction Waste Management	Comply with national guidelines and good international industrial practices in general and construction waste management. Waste collection/disposal pathways and sites will be identified for the major waste types expected from demolition/construction activities. Construction waste will be collected and disposed of properly by licensed collectors.	Ensure all related permits are obtained for waste disposal Ensure that the construction sites comply with all national laws and guidelines for general and construction waste management	Contractor Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection prior to commencement of works; and Regular supervision.

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	<p>The waste disposal records will be maintained as proof of proper management as designed.</p> <p>The contractor will reuse and recycle appropriate and viable materials (except asbestos) whenever feasible.</p>			
Effluents	<p>Ensure appropriate containment and storage of construction wastewater, including sanitary water.</p> <p>No untreated effluent is discharged.</p>	No untreated wastewater discharge	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	<p>Regular site inspection</p> <p>Review of grievance records</p>
Emissions and dust	<p>Ensure that the contractor staff wear appropriate PPE, e.g., face mask.</p> <p>Sensitize communities to maintain a safe distance.</p>	<p>Daily visual inspection of the site</p> <p>The supervisory checklist was developed by the contractor and approved by ZINWA.</p>	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Visual inspection during regular supervisory visits
	Sensitize drivers to turn off their vehicles when not in use	Vehicle engines are switched off when not in use	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection and review of grievance records
Noise and vibration	Avoid operations like drilling and vehicle movements at night.	No work conducted between 8 pm and 6 am	Department of Water Resources Development and	Site Inspection and review of grievance records

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			Utilisation, ZINWA Groundwater Section.	
	Locate stationary equipment (such as power generators) as far as possible from nearby receptors (e.g., worker resting areas, populated areas, and environmentally sensitive areas). Ensure that noise levels don't exceed 120db in case of equipment or vehicle use.	Adequate distances between equipment and receptors are kept Use of sound detector to ensure that noise level is kept below recommended level	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Once prior to the commencement of works Monitor noise levels in case equipment is used Review of grievance records
Vegetation clearing	Limit vegetation clearing to areas within the site boundary where it is strictly necessary.	Visual Inspection of vegetation clearing	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection prior to commencement of activities. Review of grievance records
	Avoid clearing mature trees and endangered species. In areas where endangered species are known to exist, carry out adequate evaluation to ensure that the works will not adversely impact them. Plan adequate mitigation measures to ensure the works will not negatively affect the endangered species. If endangered species are found unexpectedly during works, halt all works, provide an ad hoc assessment of the	Visual Inspection and comparison of matured trees before and after works	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Site inspection prior to commencement of activities. Review of grievance records

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	areas for endangered species, and establish adequate mitigation measures.			

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C. Health and Safety				
Accident reporting	Ensure all H&S-related incidents (e.g., observations, accidents, observations, and near misses on OHS, GBV, environmental pollution, etc.) on site are recorded and followed up properly.	H&S incident reporting protocol in place	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Check incident/accident records.
Personal protective equipment	Ensure the provision of Personal Protective Equipment (PPE) (i.e., hard hats, masks, safety glasses, safety boots) for workers. Mandate the contractor to provide adequate PPE to workers at all times. Include the mandate in the contract agreement with the selected contractor. The Contractor shall provide appropriate safety equipment to all his staff on site and comply with local legislation regarding Health and safety requirements.	Daily visual inspection Supervisory checklist developed by the Contractor and approved by ZINWA	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Regular supervisory visits to check PPE

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C. Health and Safety				
First-aid	<p>The Contractor shall provide and maintain all equipment necessary to render first aid in case of accidents or other emergencies in operative conditions. This equipment shall be kept in readiness at the works' sites, at camps, and wherever the Contractor's staff may regularly live and work.</p> <p>The Contractor shall ensure that there are persons available at all such places with knowledge of simple first-aid procedures and can administer help in the event of injury.</p> <p>The Contractor shall be responsible for the cost of all site welfare arrangements, health requirements, warning signs, and all other safety precautions.</p> <p>All work is to be executed in a safe and responsible manner, and the Contractor is to proceed in accordance with the provisions of the appropriate legislation.</p>	<p>First aid is on site and adequately stocked</p> <p>Supervisory checklist developed by the Contractor and approved by ZINWA</p>	<p>Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.</p>	<p>Regular supervisory visits to check the availability of first aid kit</p>
Hygiene, accommodation, and food	<p>Ensure provision of Health and Safety (H&S) and hygienic and sanitary facilities at the site. (i.e. toilets, drinking water, shaded rest area)</p>	<p>Visual inspection</p>	<p>Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.</p>	<p>Campsite inspection prior to accommodation of the workers.</p>

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D. Labour and relations with local communities				
Local recruitment	Ensure local communities are preferred for the supply services, e.g., building.	Supervisory checklist developed by the Contractor and approved by ZINWA Inspection of daily labour roster	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Regular supervisory visits to verify local recruitment
Land acquisition and land take	Land taken by both formal and informal land owners/users should be avoided to the extent possible. If land take is inevitable, no forced eviction should take place. Owners should be compensated before access to land. Engage with the local community to understand land ownership and land use.	Where applicable, a signed document showing voluntary donation of the land to the project is in place.	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Inspection during site selection Review of grievance log
Community interaction	Engage/ communicate/inform communities. Ensure consultations with the local authorities and communities regarding the construction. Obtain local knowledge regarding chance finds and land acquisition matters.	Minutes of Meetings Grievance Mechanism	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review of grievance register Minutes of consultation meetings
	Initiate an efficient Grievance Mechanism to allow potentially affected individuals to raise their concerns.	Grievance Mechanism in place, grievances recorded	Department of Water Resources Development and Utilisation, ZINWA Groundwater Section.	Review of grievance register



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