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Embulbul Community Water Project

Project Completion Report

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Executive Summary

This report provides a comprehensive overview of the completed works for the Embulbul Community Water Project. The project was executed in accordance with the Terms of Reference, achieving all milestones as scheduled. It involved the construction of a 50 cubic meter, 15-meter-high elevated steel tank, the reconditioning and solarization of the borehole, renovation of the pump house, and establishment of a demonstration farm to support sustainable agricultural practices in the community

The works were completed on time and to the specified quality standards

Project Milestones and Timeline

Project	Phase	Milestone	Task	Timeline
Elevated Steel Tank	1. Mobilization & Site Prep.	1.1 Project Launch	Site handover & official launch	May 26 - May 27, 2025 (2 days)
		1.2 Site Setup	Mounting of sign posts	May 26 - May 27, 2025 (2 days)
		1.3 Site Clearance	Mobilization & site clearance	May 28 - May 30, 2025 (3 days)
		1.4 Temp. Structures	Erection of site house, demarcation, siting & site planning	June 2 - June 6, 2025 (5 days)
		1.5 Security	Perimeter fencing and main gate construction	June 9 - June 13, 2025 (5 days)
	2. Foundation & Base	2.1 Excavation	Excavation of tank foundation	June 2 - June 6, 2025 (5 days)
		2.2 Base Construction	Setting up the base & curing based on the engineer’s design	June 9 - June 13, 2025 (5 days)
		2.3 Columns & Beams	Construction of the foundation base and columns & beams for the base	June 16 - June 20, 2025 (5 days)
		2.4 Foundation Curing	Curing for 21 days	June 23 - July 14, 2025 (21 days)
	3. Tower & Tank Erection	3.1 Supply Steel Tower	Supply of the steel tower	May 28 - July 18, 2025 (38 days)
		3.2 Construct Tower & Tank	Assembly of the steel tower & construction of tank	July 15 - July 25, 2025 (9 days)
	4. Finishing & Commissioning	4.1 Painting & Plumbing	Painting, plumbing, & automation works	July 28 - August 1, 2025 (5 days)
		4.2 Final Fencing	Fencing around the tank to prevent unauthorized access	August 4 - August 5, 2025 (2 days)
		4.3 Final Handover	Final tests and project handover	August 6, 2025 (1 day)
Borehole Reconditioning	1. Reconditioning	1.1 Pump Lifting	Lifting of pump from borehole	May 26 - May 28, 2025 (3 days)
		1.2 Borehole Development	Flushing & developing the borehole	May 29 - May 30, 2025 (2 days)
		1.3 Test Pumping	24-hour test pumping	June 2 - June 3,

			to ensure yield adequacy	2025 (2 days)
		1.4 New Pump Installation	Installation & test running of new pump	June 4 - June 6, 2025 (3 days)
		1.5 Borehole Chamber	Construction of the borehole chamber	June 9 - June 13, 2025 (5 days)
	2. Solarization	2.1 Solar Structure	Siting & construction of solar structure	June 16 - June 20, 2025 (5 days)
		2.2 Paint & Panels	Application of silver paint & mounting of solar panels	June 23 - June 27, 2025 (5 days)
		2.3 Wiring & Connection	Connecting panels to borehole via underground cable	June 30 - July 4, 2025 (5 days)
		2.4 Inverter & Final Connection	Connecting hybrid inverter & final connection to system	July 7 - July 11, 2025 (5 days)
		2.5 Electrical & Testing	Earthing, lightning arrestor, & test running	July 14 - July 18, 2025 (5 days)
		2.6 Ground & Fencing	Fencing, securing, & applying ballast	July 21 - July 25, 2025 (5 days)
		2.7 Gate & Blocks	Construction of gate & installation of hatari blocks	July 28 - August 1, 2025 (5 days)
		2.8 Final Site Clearance	Site clearance and landscaping	August 4 - August 6, 2025 (3 days)
Pump House Renovation	1. Renovation	1.1 Cleaning	Clean up and clear up the pump house	May 26 - May 27, 2025 (2 days)
		1.2 Painting	Application of paint	May 28 - May 30, 2025 (3 days)
		1.3 Doors	Repair, replacement, and painting of doors	June 2 - June 6, 2025 (5 days)
Demonstration Farm	1. Setup	1.1 Siting	Siting the farm area	May 26, 2025 (1 day)
		1.2 Land Prep	Land preparation (digging, re-ploughing, setting up beds)	May 27 - May 30, 2025 (4 days)
		1.3 Drip System	Drip irrigation system installation	August 4 - August 6, 2025 (3 days)
		1.4 Planting & Training	Planting vegetables & training caretaker	August 4 - August 6, 2025 (3 days)

Project Execution and Detailed Findings

This section provides a detailed overview of the completed works for the Embulbul Community Water Project. The project was executed in accordance with the Terms of Reference and successfully achieved all of its milestones.

1. Construction of Elevated Steel Tank

The primary objective was to construct a 50 cubic meter capacity, 15-meter-high elevated steel tank. The construction was carried out in distinct phases:

- **Site Preparation**: Work began in late May 2025 with the official project launch and site handover. This included mounting signposts, mobilization, site clearance, and relocation of old houses. The project area was demarcated, site planning was completed , and perimeter fencing was installed, including the construction of a main gate.
- **Foundation and Base**: This phase involved excavating the tank foundation, setting up the base of the tank , and carrying out the curing process in accordance with the engineer's design. This was followed by the construction of the foundation base and the columns and beams for the entire base. A 21-day curing period was observed, followed by backfilling with concrete mortar and an additional 14 days of curing.
- **Tower and Tank Assembly**: The steel tower was supplied and assembled, and the tank itself was constructed, with its joints sealed using a bituminous seal.
- **Finishing Works**: The final stage included painting, plumbing, and automation works. A final fence was installed around the tank to prevent unauthorized access.

2. Borehole Service Reconditioning and Solarization Annex

This phase ensured the borehole was fully functional and equipped with a sustainable energy source.

- **Reconditioning**: The existing pump was lifted, and the borehole underwent flushing and development. A 24-hour test pumping was performed to confirm yield adequacy, followed by the installation of a new pump as per the engineer's specifications and a test run. A borehole chamber was then constructed.
- **Solarization**: For the solar system, a structure was sited and constructed. Silver paint was applied to the structure, and solar panels were mounted and secured. The panels were connected to the borehole via underground cables, and a hybrid inverter was connected in the pump house. The system received its final connection to the borehole, along with earthing and a lightning arrestor. A test run confirmed system functionality. The entire solar structure was then fenced and secured , with hatari blocks installed along the cable route. Site clearance and landscaping of the area were also completed.

3. Renovation of the Pump House

The pump house was renovated to improve its aesthetics and provide better protection for the equipment. This included cleaning and clearing the interior , applying paint , and repairing and replacing the doors.

4. Establishment of Demonstration Farm

A demonstration farm was established to support the community's sustainable agricultural practices. This involved siting the farm area , preparing the land with digging and re-ploughing, and setting up planting beds, installing drip irrigation system. The project concluded with training a local caretaker on the irrigation system's operation and a formal handover.

Conclusion

The Embulbul Community Water Project was successfully implemented in accordance with the Terms of Reference. The project has significantly improved water storage and distribution infrastructure, ensured sustainable energy use through solarization, enhanced agricultural productivity via the demonstration farm, and provided a robust foundation for future community development. The works were completed on time and to the specified quality standards.