

ToR of Pump testing Ref:4200805742

Implementation of Drilling 3 boreholes, Solar systems, Pumping Units, Pumping Rooms, Water Supply Network, Transmission Lines, 18m Tower tank (capacity 100m3), of Khor Malang Projects Wau Province, South Sudan

	ToR of Pump testing of The 3 boreholes are located in Wau Province, South Sudan sub-district. Initial information is that the depth is at least 100 m depth with a diameter of 6". ACCORDING TO THE FOLLOWING COORDINATEST (KM-1 = 7.728250°, 27.934470°), (KM-3 = 7.730050°, 27.937350°), (KM-4 = 7.728332°, 27.943230°),
Step of works	
A	Equipment mobilization to the working sites
B	Pump and generator set installation
C	<p>Step drawdown test (SDT) including five steps with constant flow rate:</p> <ul style="list-style-type: none"> a) first step with constant flow rate of 2 M3/H for 120min; b) second step with constant flow rate of 4 M3/H for 120min; c) third step with constant flow rate of 6 M3/H for 120min; d) fourth step with constant flow rate of 8 M3/H for 120min; e) fifth step with constant flow rate of 10 M3/H for 120min; <p>The above flow and duration of the steps are an estimation to be used as a minimum reference. The actual values are to be determined during the pumping test depending on the outcomes of the steps. The actual flow and duration of the steps must be validated in advance by IOM site Engineer. IOM site Engineer may require to vary the flow and duration of the steps.</p>
D	After returning the water level to the initial level after the step test, a Constant Rate Test (CRT) will be done for duration of 48hr without stopping. The flow will be determined according to the step test by the IOM engineer.
E	Recovery test , starting immediately after the completion of the constant pumping test for 48hr. It includes observation and measurement of the water level till recovery of the initial water level before the pumping test the data will be taken by IOM engineer .
F	Left the pump and pipes and reinstalling again

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Step of works	
	After the completion of the pumping test, a <u>detailed report</u> should be prepared and it should contains as a minimum the following information:
	Drawing of the cross section of the borehole showing the situation of the casing,
	Total depth of the borehole (m)
	Static level of the water table (m)
	Tables with drawdown/time
G	Diagrams with drawdown/time and yield/time, including all the tests explained at the point 1, 2, 3 (SDT, CRT and recovery test)
	Safe/sustainable yield (m3/h)
	Recommended yield (m3/h)
	Dynamic level (m) considering the recommended yield and safe yield.
	Suitable depth for the pump (m)
	Results of bacteriological, chemical and physical test

The Bill of Quantities shall be read in conjunction with TOR and the other contractual documents. All materials, equipment and forms/template shall comply with the specifications and shall be approved by the IOM engineer before and after the use or installation. All the activities shall be done with the presence of IOM engineer. The price shall include all the costs needed to have the test done: labour, material, plant and equipment, transportation, overhead, taxes, risk and profit.

Before starting the test, the contractor shall:

1.The disposal of the extracted water during the pumping test should be selected by the contractor and the contractor should arrange with the owner and he should install the required pipeline to reach that disposal .