NERKWO WATER SUPPLY-MOIBEN/KUSERWO WARD

BILL OF QUANTITIES

REHABILITATION OF NERKWO WATER PROJECT

1. Nerkwo Rising main from intake to 90m^3 Forestry masonry tank.

Item No	Description	Unit	Qty	Rate	Amount
1.	Clear bushes along the entire pipeline. Allow for root removal.	LM	600		
2.	Excavate and backfill in normal soil 600mm minimum depth trench for the pipe. Parallel line to the existing pipeline used by Marakwet boys High school.	LM	1080		
3.	Supply, handle, lay and joint 80mm diameter plastic pipe class D for the raising main.	No	100		
4.	Supply, handle, lay and joint 50mm diameter plastic pipe class D for the raising main.	No	80		
5.	Supply, handle, lay and joint 80mm diameter socketed GI pipe class B for the distribution. For crossing the river	No	4		
6.	Supply, deliver and fix the following pipe fittings				
	1) PVC reducing socket 3''x2''	No	1		
	2) PVC valve sockets 3''	No	2		
	3) saddle clamp 3''x1''	No	1		
	4) GI Tee 2''Ø	No	1		
	5) GI reducing bush 2''x1''	No	1		
	6) PVC valve socket 2'' Ø	No	3		
	7) GI Nipple 1'' Ø	No	4		
	8) Gate valves 1'' Ø	No	2		
	9) Air valves 1'' Ø	No	2		
	10) Gate valves 1.5'' Ø-Pegler	No	2		
	11) Gate valves 3''-pegler	No	1		
	12) GI Nipples 1.5 ''	No	2		
	13) GI Unions 1.5''	No	2		
	14) PVC Valve socket 1.5''	No	2		
	15) Steel Manhole cover 24''x18'' - Tank cover.	No	1		

7.	Excavate and backfill in normal soil 600mm minimum depth trench for the pipe. Incomplete rising main from intake to Kamok-Kapsumai	LM	120		
8.	Supply, handle, lay and joint 80mm diameter UPVC pipes class D for the raising main.	No	20		
9.	Supply, handle, lay and joint 80mm diameter socketed GI pipes class B for the raising main.	No	4		
1.	Supply, handle, lay and joint 50mm diameter socketed GI pipes 2''Ø class B	No	1		
2.	**SUB TOTAL**				
3.	**Rising main from intake to Kamok-Kapsumai tanks** Supply, deliver and fix the following pipe fittings for two masonry tanks 1) PVC tee 3''Ø 2) PVC reducing socket 3''x 2 3) PVC Valve Socket 2'' Ø 4) Gate valve 2'' (Pegler) 5) PVC Valve socket 3'' Ø 6) VJ coupling 3'' Ø 7) GI socket 2'' 8) GI socket 3'' 9) GI reducing socket 3'' x 2'' 10) GI Nipple 3''	 No No No No No No No No No No	 1 1 6 2 2 1 2 6 1 1		
4.	Excavate and backfill in normal soil 600mm minimum depth trench for the pipe. Incomplete rising main from intake to Kaplenge tank	LM	300		

5.	Supply, handle, lay and joint 50mm diameter UPVC pipes class D for the raising main.	No	50		
6.	Supply, handle, lay and joint 50mm diameter socketed GI pipes class B for the raising main, for crossing the river	No	4		
7.	**SUB TOTAL**				
8.	**Rising main from intake to Kaplenge tank** Supply, deliver and fix the following pipe fittings 1) PVC Valve socket 2'' Ø 2) VJ Coupling 2'' Ø **3)** GI Tee 3'' Ø	 No No No	 6 2 1		
9.	4) GI Reducing socket 3'' x 2'' 5) GI Nipple 3'' Ø 6) GI Nipple 2'' Ø 7) Gate valve 2''(Pegler) 8) Drilled Steel flanger 2'' Ø 9) GI Socket 2'' Ø 10) PVC Tee 2'' Ø	No No No No No No No	1 1 2 1 2 6 1		
10	**SUB TOTAL**				
	Distribution Line From Kapsumai to Cheptongei				
11	Excavate and backfill in normal soil 600mm minimum depth trench for the pipe. **Distribution line from Kapsumai to Cheptongei**	LM	60		
12	Supply, handle, lay and joint 50mm diameter socketed GI pipes class B for crossing the river	No	10		
13	Supply, handle, lay and joint 50mm diameter UPVC pipes class D	No	10		

	Supply, deliver and fix the following pipe fittings, for connecting line across the Moiben River at Cheptongei, installation of 2No wash outs and to connect the line from the tank to the main line. 1) GI Sockets 2'' Ø 2) Gate valves 2'' Ø 3) GI Tee 2'' Ø 4) GI Nipples 2'' Ø 5) PVC Valves sockets 2'' Ø	 No No No No No	 14 2 2 3 14		
	SUB TOTAL				
	Distribution line from forest tank to katee tank work to be done				
14	Excavate and backfill in normal soil 600mm minimum depth trench for the pipe. Distribution line from Kapsumai to Cheptongei	LM	600		
15	Supply, handle, lay and joint 1.5''Ø' socketed GI pipes class B for crossing the road and repair	No	2		
16	Supply, handle, lay , joint and test 1'' Ø UPVC pipes class D	No	100		
	Supply, deliver and fix the following pipe fittings 1) GI sockets 1.5'' Ø 2) Gate valves –Pegler 1.5'' Ø 3) Gate valves-Pegler 2'' Ø 4) Manhole Cover 18'' x 24'' for katee tank 5) PVC Valve socket 1.5'' Ø	 No No No No No	 3 2 1 1 6		
	SUB TOTAL				

	Rehabilitation and completion of Nerkwo Composite Filtration Unit • Supply and fix filter media I. Filter sand effective size 0.5mm and uniformity coefficient 1.5 II. Coarse sand effective size 1.0mm III. Gravel effective size 2-5mm IV. Ditto 12-20mm V. Ditto 20-38mm • Repair handrails and walkways round the perimeter of the filter unit and from the ladder to the filter and fix the filter structure and nossel (available at treatment work)	 M^3 M^3 M^3 M^3 M^3 l/s	 20 2 0.8 0.8 0.8 1		
	Supply, deliver and fix the following pipe fittings I. Drilled Steel flanges 4''Ø II. Drilled Steel flanges 3'' Ø III. Bolts nuts and woshers.Nuts and bolds 4'' Full thread IV. Heavy Gasket material V. GI Bend 3'' Ø VI. GI Elbow 3''Ø VII. Sluice valve 3''Ø VIII. Master meter 3''Ø IX. GI Nipples 3'' Ø X. Non return valve (Pegler)with Flabs types 3''Ø XI. Foot valve 3''Ø (Pegler) **XII.** VJ Coupling 3'' Ø	 No No No M No No No No No No No no	 2 14 70 1 6 4 4 1 10 2 2 4		
17	Supply, handle, lay and joint 3'' Ø' socketed GI pipes class B	No	6		
18	**SUB-TOTAL**				

19	**CHEBARA –CHEBIEMIT WATER PROJECT** Supply, handle, lay and joint 1.5'' Ø' socketed GI pipes class B	No	3		
20	Backfill excavated pipeline, normal soil 600mm minimum depth trench for the pipe. Distribution line for kipyuso village	LM	732		
21	Supply, handle, lay , joint and test 1.5'' Ø UPVC pipes class D	No	122		
22	**Supply, deliver and fix the following pipe fittings** I. Valve socket 1.5'' Ø II. PVC End cap1.5'' Ø	 No No	 6 1		
23	**SUB-TOTAL**				
	PUMP SET (high lift) Supply, install and test a pump set capable of delivering 30m3 of clear water against a total pumping head of 250 meters. The pump should be coupled to a motor of not more than 45 Kilowatts. Pump and motor should be assembled on a common steel base frame using flexible coupling.	No.	1		
	STARTER CONTROLL PANEL Supply install and test a star delta control panel comprising of the following: -Star Delta starter control panel to drive a motor of 45 kilowatts. Wiring should be done using 16mm^2 cable. - Phase failure relay complete with it's 3 pole MCB protection of 10 Amps. - Water level sensor relay (provide wiring for the sensor electrodes at the tank to put off the motor when tank is empty. - Install power factor correction capacitor complete with its protection. - Provide a panel isolator of 100Amps on the side of the box. - Install 3 No. Panel ammeters of 0 to 100 amps on the face using current transformers. - Install voltmeter 0 to 500 volts using a	No.	1		

	selector switch.				
	PUMP SET (low lift) Supply, install and test a pump set capable of derivering over $30m^3$ of clear water against a total pumping head of 15 meters. The pump should be coupled to a low speed motor of 3 Kilowatts. Pump and motor should be assembled on a common steel base frame using flexible coupling.	No.	1		
	STARTER CONTROLL PANEL Supply install and test a direct on line control panel comprising of the following: -Phase failure relay complete with it's 3 pole MCB protection of 10 Amps. - Water level sensor relay (provide wiring for the sensor electrodes at the tank to put off the motor when tank is full. - Install 3 No. Panel ameters of 0 to 20 amps on the face using current transformers. - Install voltmeter 0 to 500 volts using a selector switch.	No.	1		
	-Wiring from the meter box to the control panel and the motors using $16mm^2$ single core cables. Use PVC conduits. -Meter separation to include the wiring certificates.	Mts l/s	65 1		
24	**Add project Supervision**				**200,000/=**
	SUB TOTAL				
	GRAND PROJECT COST TO BE CARRIED TO FORM OF TENDER				

AMOUNT IN WORDS (KSHS)…….
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CONTRACTOR'S NAME……

ADDRESS……

SIGN……. STAMP…….