REF : CWWDA/WFS/W/01/19-20

DATE : 12th December 2019

ALL TENDERERS,

RE: BOREHOLE CONSTRUCTION AND EQUIPPING AT SHIRIKISHO PRIMARY SCHOOL (MUNUJI) AT TANA DELTA CONSTITUENCY TANARIVER COUNTY CONTRACT NO. CWWDA/WFS/W/01/19-20

CLARIFICATION ON BILLS OF QUANTITIES No. 3 and 6

The above subject matter refers.

Attached herewith please find BILLS OF QUANTITIES (which shall replace the BOQ earlier used in the Bidding Document) with the following Amendments; -

i) BILL No. 3.5 *(Item 3.5.1-3.5.5)* ***SUPPLY AND INSTALLATION OF SOLAR PANELS*** *is deleted.*

ii) Bill No. 6 ***RAINWATER HARVESTING*** is deleted.

JACOB TORUTT

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DRILLING & EQUIPPING OF SHALLOW BOREHOLE FOR SHIRIKISHO PRIMARY SCHOOL IN GARSEN CONSTITUENCY IN TANARIVER COUNTY
CONTRACT NO.

NO.	BILL DESCRIPTION	UNIT	QTY	RATE KSHS	AMOUNT KSHS
1	**BILL NO. 1 PRELIMINARY & GENERAL ITEMS**				
	Contractual Requirements				
1.1	Performance Security	Item	1		
1.2	Insurance for works	Item	1		
	Performance Requirements				
1.4	Provide, erect and maintain sign boards 1No. and Branding at locations shown by the Engineer.	Sum	1		
	Administration Costs				
1.5	Allow the Provisional Sum of Ksh. 150,000 to cover supervision costs of Engineers assigned on the project from the Employers head office to cover expenses for communications, transport, allowances ,etc to be expended as directed by the Project Manager.	PS	1		
1.6	Add ..... % for Contractors profit & overhead costs for item 1.6 above	%	0.15		
1.7	Allow Provisional sum of Kshs 50,000 for each borehole for acquisition of drilling and abstraction permits from Water Resources Management Authority .The Contractor will be required to make applications on behalf of the Board and ensure timely acquisition of the permits.	PS	1		
1.8	Add ..... % for Contractors profit & overhead costs for item 1.7above	%	0.15		
1.9	Allow provisional Sum for Ksh.70,0000 for Hydrogeological Survey for appropriate drilling site selection (provisional)	Sum	1		

	TOTAL BILL NO. 1 PRELIMINARY & GENERAL ITEMS carried to SUMMARY PAGE				
	BILL NO. 2 BOREHOLE DRILLING				
2.1	**Mobilization**				
2.1.1	Mobilization of drilling unit to site, erect at position of borehole, dismantle and demobilize on completion	Sum	1		
2.1.2	Allow for all costs involved in providing water for all requirements	Sum	1		
2.1.3	Allow for clearance of site on completion	Sum	1		
2.2	**Drilling**				
	Air drilling				
2.2.1	Drilling a 254mm bore from 0 - 50 m	M	50		
2.2.2	Ditto above but from 100 - 200 m	M			
2.2.3	Allow for collection and sampling of drill cuttings at 2 meter intervals	Sum	1		
	Mud drilling				
2.2.5	Drilling a 200mm bore from 0 - 50m	M	50		
2.2.6	Ditto above but from 100 - 200 m	M			
2.2.8	Allow for collection and sampling of drill cuttings at 2 meter intervals	Sum	1		
2.3	**Well Construction**				
2.3.1	Supply and install 150mm plain uPVC casing class E	M	40		
2.3.2	Supply and install 150mm uPVC screens class E	M	30		
2.3.3	Supply and install gravel pack with average grain size of 2 mm	Ton	4		
2.3.4	Grouting of top 3 metres of annular space between casing and borehole	Sum	1		
2.3.5	Form concrete surface plug around casing with dimensions 1000 x 1000 x 1000 mm	Sum	1		
2.4	**Well Development and Testing**				
2.4.1	Well development using air or water jetting as recommended by the Engineer or his appointed representative	Hr	6		
2.4.2	Insertion and removal of equipment	Hr	6		

	Test pumping				
2.4.3	Undertake a discharge test as specified	Hr	24		
	Recovery Test				
2.4.4	Undertake a recovery test test as specified or until the initial water rest level	Hr	8		
2.4.5	Supply and install 200 mm diameter well cap	Sum	1		
2.4.6	Chemical analysis of water	Sum	1		
	TOTAL BILL NO. 2 BOREHOLE DRILLING carried to SUMMARY PAGE				
3	**BILL NO. 3 BOREHOLE EQUIPPING**				
	Allow for Supply and Installation of the following. The cost should include all the required fittings				
3.1	Submersible Pump				
3.1.1	Allow for provision sum Ksh550,000 for purchase of a submersible pump with metallic impellers complete with a three Phase Motor with capacity to pump approximately 5-15m3/hr against a pumping head of 50m. *Precise head and flow are to be established after test pumping the borehole above. The pump should be capable of accommodating solar energy and indeed Energy from the National Grid* **(Provisional)**	Prov Sum	1		
3.2	Drawdown Pipes and Cables				
	Supply and install the following				
3.2.1	65mm diameter GI Pipes Include all the required joinery fittings	m	50		
3.2.2	10mm2 x 4core submersible drop cable	m	50		
3.2.3	Electrode cable (1mm2 x 1core)	m	50		
3.2.4	Electrodes	Nr	2		
3.2.5	Cable splicing Kit	Nr	1		
3.2.6	uPVC dipper pipes 20mm Diameter	m	50		
3.3	Borehole Surface Sundries				
3.3.1	Borehole cover plate 250mm complete with fittings	Nr	1		
3.3.2	GI Plug 65mm diameter	Nr	1		

3.3.3	GI bend 65mm diameter	Nr	2		
3.3.4	GI union 65mm diameter	Nr	1		
3.3.5	65x25mm diameter GI Tee	Nr	1		
3.3.6	Gate valve 65mm diameter peglar type or equivalent	Nr	1		
3.3.7	GI reducer tee diameter 38mm	Nr	2		
3.3.8	Single orifice air valve 25mm complete with fittings	Nr	1		
3.3.9	Non Return Valve 65mm Peglar flap type or equivalent	Nr	1		
3.3.10	Pressure gauge minimum 10 bars	Nr	1		
3.3.11	Water meter complete with accessories 65mm	Nr	1		
	Control Panel				
3.3.12	Allow for purchase of solar control panel plus inverter to run the pump above to specifications and as directed by the Engineer.(Provisional)	prov sum	1		
	Solar Panels				
3.3.13	250 Watts Crystalline solar modules/panels	No	32		
3.3.14	Solar DC Surge Arrestor	No	1		
3.3.15	Solar MC4 connectors	No	3		
3.3.16	Provide and install a 3m high solar support structure for the 32 solar panels above	No	1		
3.3.17	Allow for cable work and other related sundries	Sum	1		
3.4	Disinfection and Testing of works				
3.4.1	Allow for disinfection and testing of works	Sum	1		
	BILL NO. 3 BOREHOLE EQUIPPING carried to SUMMARY PAGE				
4	**BILL NO. 4 ELEVATED PLASTIC STORAGE TANK**				
4.1	**Plastic Storage Tank on an Elevated Platform**				
4.1.1	Allow for supply, Delivery and installation of $10m^3$ Plastic tank above	Nr	1		
4.1.2	Allow construction of steel girder 10m high water tower on rc foundaftion to act	Nr	1		

	as water holding platform for $10m^3$ Plastic tank above (to specifications).				
4.2	Alow for piping 25mm PPR to Kitchen , washrooms and 200m length	item	1		
4.3	**Plumbing works**				
4.3.1	Supply all materials and connect to tank to be installed to the borehole with 65mm diameter uPVC/GI pipe for length not exceeding 80m and as per the Engineers instruction.	**Sum**	1		
4.3.2	Allow for fittings consisting of a gate Valve, Air valve Sockets, Wash out and a stand pipe all on a 65mm diameter pipe	**Sum**	1		
4.3.3	Allow for installation of a standpipe a Yard Tap Water Point to specifications.	**nr**	1		
	TOTAL BILL NO. 4 ELEVATED PLASTIC STORAGE TANK carried to SUMMARY PAGE				
5	**BILLL NO. 6 FENCING WORKS**				
5.1	Specified concrete fence posts	Nr	110		
5.2	Bracing posts	Nr	16		
5.3	Chain link fencing	m	320		
5.4	Gate post	Nr	2		
5.5	4m wide double leaf gate	Nr	1		
	Fixtures				
5.6	Double leaf metal door frame 1.2m wide by 2.2m high and low for 300m long R16 metal grills	**Nr**	1		
5.7	Approved lock, like yale or similar	**Nr**	1		
	TOTAL BILL NO. 5 FENCING WORKS carried to SUMMARY PAGE				

SUMMARY SHEET

	BILL DESCRIPTION	
1	PRELIMINARY & GENERAL ITEMS	
2	BOREHOLE DRILLING	
3	BOREHOLE EQUIPPING	
4	ELEVATED PLASTIC STORAGE TANK	
5	FENCING WORKS	
	SUB-TOTAL	
	Add 5 % Contingency	
	TOTAL	
	Add 16%VAT	
	GRAND TOTAL	