



Indigenous Livelihoods Enhancement Partners (ILEPA)

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February 16th, 2024

TENDER NO: ILEPA/IM/01/2023-2024

BILL OF QUANTITIES FOR DRILLING, EQUIPPING & CIVIL WORKS FOR BOREHOLE WATER SUPPLY PROJECT IN MAJIMOTO 2023/2024 FINANCIAL YEAR

ITEM	DESCRIPTION	UNIT	QTY	BOQ AMOUNT	
				RATE (KShs)	AMOUNT (Kshs)
1	PRELIMINARIES & GENERAL				
1.1	Provide and erect two (2No.) publicity signboard as shall be directed by the project supervisor	Item	2		
1.2	Allow provisional sum of Kshs. 250,000 to cater for project supervision from inception to commissioning.	Item	1		
1.3	Allow provisional sum of Kshs. 50,000 for painting and branding during commissioning of the project.	Item	1		
1.4	Allow provisional sum of Kshs. 100,000 for application of drilling and abstraction permits from WRA and NEMA License	Item	1		
1.5	Mobilization and Transportation of whole drilling unit to and from the site; rates include erecting and dismantling of the drilling rig unit at a site.	Item	1		
	Total Preliminaries summary				
	DRILLING WORKS				
2	Borehole Drilling				
2.1	Drilling of 305mm (8") diameter borehole from 0 to 100m below surface	M	100		
2.2	Ditto but depth from 100m - 200m	M	100		

2.3	Ditto but depth from 200 - 290m	M	90		
2.4	Supply and installation of diameter plain mild steel casing heavy duty 4.5mm/152mm to KS 06-259 and BS 1387.	M	194		
2.5	Supply and installation mild steel casing (M/s Plasma cut well screens provision) heavy duty 4.5mm/152mm to KS 06-259 and BS 1387	m	96		
2.6	Supply and installation of filter gravel pack (2-4mm)	Ton	23		
2.7	Construction of borehole head-works around wellhead by constructing a concrete plinth and a chamber measuring 1mx1mx1m with class 20/20 very concrete floor slab and walls. Chamber to have painted Gauge16 steel plate lockable access cover 1mx1m with anti-theft and weather resistant padlock.	No	1		
2.8	Grout between the inner casing and the outer surface casing for top Six (6) metres.	CM	2		
2.9	24 Hours Test pumping; constant discharge test including installation, removal of test pumping equipment, water level observations, draw down measurements and record on recovery. Note: Time scheduled for test pumping is subject to Geologist/Engineer's instructions	Item	24		
2.1	Supply of water for drilling operations	L/Sum	1		
2.11	Carry out physical and chemical analysis of the borehole water in an approved lab and submit lab analysis report in three copies	Item	1		
2.12	Supply materials and construct 1*1*0.3m, concrete sanitary seal around the borehole and 0.15m above the ground.	Item	1		
	Total for Drilling summary				
3	BREAK DOWN FOR SOLAR PUMPING AND EQUIPPING DETAILS				

	PUMPING SYSTEM & SOLAR EQUIPMENTS				
	Pump and Motor				
3.1	Supply of a Steel pump Submersible Pump, capable of pumping (<i>Client desired yield</i>)m ³ /hr at Maximum head to be determined complete with motor subject to the Engineers approval. (Rate based on motor capacity)	kw	5.5		
	Solar Inverter				
3.2	Supply solar inverter unit 7.5 kw	No	1		
3.2.1	Supply of enclosure 1000*500*350MM	No	1		
	Solar panels				
3.3	Supply of 275kW Polycrystalline Solar panels (No be determined after Pump Design)	No	34		
	Disconnect switch				
3.4	Provide PV disconnect Switch 25A/1000VDC	No	1		
	Solar Structure				
3.5	Solar Module support structure 4m high as per the drawing (<i>Note: The area to be determined based on the Number and Size of panels to be used</i>)	Watts	9350		
3.6	Install a well probe sensor	No	1		
	Include for all necessary Accessories(Cables)				
	Submersible Drop Cable				
3.7	6mm ² 4-core Submersible drop cable	m	290		
	Underground cable				
3.8	1.5mm ² 4-core Armoured cable	m	20		
3.9	6mm ² 4-core Armoured cable	m	1		
3.10	1.5mm ² 2-core Armoured cable (Level sensor)	m	60		
3.11	0.75mm ² Electrode dual Cable (level sensor)	m	300		
3.12	6mm ² 1-Core Earth Cable	m	10		

3.13	10mm ² Twin Flat Cable with Earth	m	20		
3.14	Earth Rod/C/W Clamp	m	1		
3.15	Lightening Arrestor and Accessories	m	1		
	Pipes & Pipe Fittings				
3.16	1½” UPVC Super Heavy duty pipes (3m length)	No	100		
3.17	25mm Airline pipes (6m length)	No	300		
3.18	1½”x 6” Borehole cover	No	1		
3.19	1½" Water meter(Quality type)	No	1		
3.20	Construction of Standard Masonry Borehole Chamber	No	1		
3.21	Borehole sundries	No	1		
3.22	Labour transport, installation and testing				
	Total for equipping summary				
4	WATER KIOSK-with 10m³ plastic tank				
4.1	Supply and install 1No 10,000 litres plastic tank (UV resistant)	Item	1		
4.2	Light bush clearing	m ²	100		
4.3	Excavate top soil Average 150mm depth and cart away 5 meters for re-use.	m ²	9		
4.4	Excavate pit for 4No. 900 X 900 mm VRC columns starting at 150mm below ground level but not exceeding 1m depth.	m ³	4		
4.5	Excavate trench for strip foundation starting at 150mm below ground level but not exceeding 1m depth.	m ³	7.2		
4.6	Provide and lay approved hard-core 300mm thick layer on the strip foundation	m ²	9		
4.7	Provide and construct 200mm thick by 450mm wide strip foundation (1:3:6)	m ³	1		
4.8	Provide and construct foundation walling using dressed stones (9" X 9'), bedded in mortar (1:4)	m ²	6		
4.9	Provide and place 300mm approved hard-core and properly rammed.	m ²	12		

4.1.0	Provide and place 50mm blinding concrete(1:3:6)	m ²	12		
4.1.1	Provide and place damp proof membrane on the blinded surface	m ²	12		
4.1.2	Provide and place reinforced concrete floor (1:2:4) 100mm thick	M ³	1.2		
4.1.3	Construct 200mm thick walling with mortar (1:4) jointing. The external side of the walling is keyed to Engineer approval	m ²	23		
4.1.4	Provide and cast reinforced column 200mm by 200mm and 2640mm high .Rate inclusive of reinforcement bars-D12	m ³	1		
4.1.5	Provide and cast reinforced ring beam measuring 12m x 450m x 200mm (1:2:4). Rate inclusive of reinforcement bars-D12	m ³	2		
4.1.6	Provide and construct a reinforced 150mm thick roof slab using high yield reinforcement bars of 10mm diameter to be spaced at 150mm C/C both ways and be in the mix of 1:2:4 (VRC). The parapet of 150mm high and 150mm wide round must also be reinforced.	m ³	3		
4.1.7	Provide 1000mm dia.semi-circular drainage groove covered with removable steel grill casement draining into 600 x 600mm Soak pit	Item	1		
4.1.8	Provide and apply 20mm thick plaster to Roof, floor and walls (1:4) mortar	m ²	40		
4.1.9	Provide, fabricate and fix steel casement door (2100mm x 900mm)	No	1		
4.2.0	Provide, fabricate and fix grilled steel casement window(1300mm x 1200mm high)	No	1		
4.2.1	Provide and apply three coats of paints on the internal walls and roof slab.The rate include branding the kiosk as per the Engineer approval	m ²	40		
4.2.2	Provide and install 25mm diameter Consumer meter	No	1		
4.2.3	Provide and fix 20mm diameter back nuts	No	4		

4.2.4	Provide and fix 25mm diameter Elbows	No	6		
4.2.5	Provide and fix 20mm diameter Equal Tee	No	2		
4.2.6	Provide and fix 20mm diameter Ball Cocks	No	3		
4.2.7	Provide and fix 20mm diameter Union Sockets	No	2		
4.2.8	Socketed 25mm dia.GI from plastic tank to kiosk taps	m	6		
	Total for Water Kiosk summary				
5	CATTLE TROUGH				
5.1	Clearance of trough area and removal of trees and stumps	m ²	66		
5.2	Excavate over site soil material to reduce levels not exceeding 225mm deep and cart away	m ²	66		
5.3	Excavation for raft foundation not exceeding 1.0 metres deep starting from reduced levels.	m ³	22		
5.4	225 mm thick approved hard-core filling, levelled and compacted in 150mm layers.	m ²	22		
5.5	Level and blind surface of hard-core with 50mm thick 1:4:8 concrete mix blinding.	m ²	1.1		
5.6	Formwork to sides of floor slab 150mm thick	m	26		
5.7	Reinforcement bars D8. include for tying to floor slab	Kg	102		
5.8	Insitu reinforced concrete:(mix 1:2:4) grade 20(20 mm aggregate):vibrated in foundation strip 150mm thick	m ³	2.7		
5.9	6"x9" approved local stone; squared; and rough chisel dressed one side, bedding and jointing in cement mortar (1:3) in Walls 150mm Thick	m ²	13		
5.1	Reinforcement bars D8. include for tying to walling	Kg	32		
5.11	Plaster; 9mm first coat of cement: sand (1:3) steel trowelled in 25 mm thick 2 No. Coat work to sides of	m ²	13		

	cattle trough internally. Include for water proofing				
5.12	Plaster; 9mm first coat of cement: sand (1:3) steel trowelled in 25 mm thick 2 No. Coat work to sides of cattle trough externally	m ²	18		
5.13	Supply, deliver to site approved hard-core, place and join with 1:3 cement mortar to form grouted riprap as directed. Include for levelling.	m ²	48		
5.14	Fabricate and install a 700mmx1000mm lockable 16g steel plate manhole hole cover framed and cross reinforced with 16g, 25mm hollow section steel cover.	No	1		
5.15	Fittings from tank to trough				
5.16	2" Ø GI pipes "B"	No	2		
5.17	2" Ø GI long nipple	No	4		
5.18	2" Ø GI elbow	No	4		
5.19	2" Ø GI backnut	No	4		
5.2	2" diameter union	No	1		
5.21	2" diameter gate valve	No	1		
5.22	2"x1½" Ø reducing socket	No	1		
5.23	1½" Ø plain socket	No	1		
5.24	1½" Ø ball valve Pegler	No	1		
	Total for Cattle trough summary				
6	FENCE AND GATE				
	Provide, dig holes, install and fasten:				
6.1	Excavate, provide and erect chain link fence 2.1m (7') above ground comprising of:	M	100		
	3m (10') concrete posts set 0.9m (3') below ground level with concrete class 15 (1:4:8) surround at 3.0m centres with 500mm long cranks at top				
	2.1m (7') 12½ gauge chain link fence with concrete class 15 (1:4:8) grout surround at the bottom.				
	4 No. plain wire strands threaded through holes in posts.				

	4 No. strands 12½ gauge barbed wire tied to cranked				
	Gate				
6.2	Provide and install double gate of:	Item	1		
	4m wide X 2.0m high fabricated from dia. 50mm SHS (gauge 16) cut and welded to form 1.0m x				
	1.0m and 25mm x 25mm SHS cut and welded to form a mesh 150mm X 150mm Rate to include for 2No.				
	75mm x 75mm gauge 16 rectangular hollow section M.S. Gate posts and also to include for painting the gate with oxide primer and two coats top offence and weave to form mesh, concrete strutting posts at corners				
	Rate to include for all the necessary excavation and disposal. Of blue gloss paint				
	Total for Fence and Gate summary				
S/No	SUMMARY				Amount Kshs
1	Preliminaries				
2	Borehole Drilling				
3	Borehole Equipping				
4	Construction of water kiosk				
5	Construction of cattle trough				
6	Fence and gate				
	Total				

- Bill of Quantities should be included with other relevant documents (Company Profile, Registration Certificates, KRA Tax Certificate, KRA Tax Compliance, relevant NCA Certificates, Bank Statement, Certificate of Good Conduct for Contractors, etc.) and addressed to the undersigned should be sent to our email procurement@ilepa-kenya.org **OR** dropped on or before **Friday, February 23rd, 2024** at the ILEPA Offices.
- All prices should be inclusive of VAT and other charges attracted by the commodity delivered to ILEPA where applicable.
- ILEPA has the right to accept or reject any tender without giving reasons thereof.

All documents should clearly state the tender number and be addressed to the;

The Procurement Manager

Indigenous Livelihoods Enhancement Partners (ILEPA)

P.O. BOX 1088 – 20500

Narok County