

BILL OF QUANTITIES					
CONSTRUCTION OF MITING'ANI SAND DAM WATER PROJECT					
BILL 1.0 PRELIMINARIES					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
1.01	Construction of plant and personnel mobilization to site including setting up camp and demobilization	L/sum	1		
	Setting out				
1.02	Allow for setting out of the pipeline route, buildings and water tank extents in the presence of clients appointed site engineer	L/sum	1	50,000	50,000.00
	Sign Post				
1.03	Fabricate and installation of publicity steel sign post as directed by the client's appointed engineer	No.	1		-
	Butt fusion (Rate per Joint)				
1.04	Butt fusion of HDPE Pipelines	Item	LS		50,000.00
	Total Carried to Grand Bill Total for BILL No. 1				
BILL 2.0 SOLAR PUMPING SYSTEM					
ITEM	ITEM DESCRIPTION	UNIT	QTY	RATE	AMOUNT
2.0.1	Supply, Deliver and Install a Submersible Multistage Centrifugal Pump Set of Duty Point: - 10.0 m ³ /hr at a Total Head of 160meters, DS 8-50 or approved equivalent. The pump Efficiency at duty point should be above 50%. The pump Impellers should be of Stainless Steel. Provide Copies of Pump Characteristic/Performance Curves (Brochures). Install as directed by the Supervising Engineer	Set	1		0.00



2.0.2	Supply, Deliver and Install an AC Solar Pump Control Module, incorporating: - detachable control interface; settable min/max frequency & open circuit voltage; display of operating parameters, including frequency, voltage, amperage, input power & pump speed; display of historical data, including energy generation, maximum power & operating times; protection against over/under voltage, over current, system overload & module over temperature; fault detection with error code display. Install SV3 11T 3PH or approved equivalent	Unit	1		0.00
2.0.3	Borehole Cable, Double Insulated, 4.0mm ² X 4core	M	90		-
2.0.4	Sensor Cable, 2Core, Double Insulated, 0.75mm ²	M	90		-
2.0.5	Supply, Deliver and Install Fabricated Steel Tower, use square tubes, 4" x 4" x 4mm for Solar Array System, securely anchored in concrete plinth, 0.5m x 0.5m x 1.0m/stand and minimum height - 4 meters high	Lot	1		-
2.0.6	Supply, deliver and install on the steel tower, solar array system of total output 14700 watts including high efficiency mono crystalline tier 1 modules such as Jinko or approved equivalent string using 6 mm sq DC cable and MC4 terminated on both sides to be properly mounted on the structure as directed by the supervising engineer	W	14700		-
2.0.7	Armored Cable, 6.0mm ² X 4 core	M	30		-
2.0.8	Armored Copper Cable, 1.5mm ² X 2 core	M	30		-
2.0.9	Cable Glands, 25mmL	No.	4		-
2.0.10	Cable Glands, 20mmL	No.	2		-
2.0.11	Splicing Kit, Medium Packet	No.	1		-
2.0.12	Cable Ties, Large Packet, Manila	No.	1		-
2.0.13	Insulating Tapes, Large	No.	10		-
2.0.14	EARTHROD C/W CLAMP	Set	1		-
2.0.15	LIGHTENING ARRESTOR C/W COPPER WIRE	Pc	1		-
2.0.16	6.0 MM* 1 CORE EARTH CABLE	Mts	25		-

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2.0.17	upvc conduit	Pc	6		-
2.0.18	Pumping Site using 2.5 high concrete posts, 2.5m spacing, c/w Mesh Wire (Chain Link) 12.5 G, 8ft High ; include concrete column anchored double opening 2.5m High fabricated steel gate	m	60		-
2.0.19	Supply and install Solar (Battery Powered) WiFi Cameras - strategically fitted on metallic fabrications on site (configure the applications to two approved android project phones as instructed by the Engineer)	Item	1		-
	Sub Total			KSH.	-
BILL 3.0 RISING MAIN					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
A Clearing/Excavation					
3.0.1	Clear pipe route of bushes, shrubs and cart away all arising, Excavate for 450mm wide x 800mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	900		-
3.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	36		-
3.0.3	e.o in hard/ rock	m ³	10		-
B Purchase, Supply and Lay joint the following including connecting to the Tank inlet					
3.0.4	75mm dia. GS pipe class B (with sockets on one end). Provide for connection with the HDPE pipe	M	42		-
	Purchase, Supply and Lay joint through butt fusion the following including connecting to the Tanks and GI pipes				
3.0.5	75mm dia. HDPE pipe PN 16	M	200		-
3.0.6	75mm dia. HDPE pipe PN 12.5	M	700		-
3.0.7	2.5" Non return valve and its accessories	No	1		-
3.0.8	Mass Concrete anchoring of pipeline around river bank	m ³	4		-

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3.0.9	Double orifice Air relief valve 2" diameter fitted into 3" pipe with all accessories	No	1		-
3.0.10	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with steel frame, cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	2		-
	Sub Total				-
BILL 4.0 Construction of Yiumo - Kaseveni Gravity Mains					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
A	Clearing/Excavation				
4.0.1	Clear pipe route of bushes, shrubs and cart away all arising, Excavate for 450mm wide x 800mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	1500		-
4.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	50		-
B	Purchase, Supply and Lay joint the following including connecting to the Tank inlet				
4.0.3	75mm dia. GS pipe class B (with sockets on one end). Provide for connection with the HDPE pipe	M	42		-
	Purchase, Supply and Lay joint through butt fusion the following including connecting to the Tanks and GI pipes				
4.0.4	75mm dia. HDPE pipe PN 10	M	300		-
4.0.5	75mm dia. HDPE pipe PN 12.5	M	1200		-
4.0.6	Double orifice Air relief valve 2" diameter fitted into 3" pipe with all accessories	No	1		-
4.0.7	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with steel frame, cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	2		-



	Sub Total				-
BILL 5.0 EXTENSION TO KWA MUUMBIKA WP					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
A	Clearing/Excavation				
5.0.1	Clear pipe route of bushes, shrubs and cart away all arising, Excavate for 450mm wide x 800mm deep channel and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	900		-
5.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	10		-
B	Purchase, Supply and Lay joint the following including connecting to the Tank inlet				
5.0.3	DN 50mm GS pipe class B (with sockets on one end). Provide for connection with the HDPE pipe	M	12		-
	Purchase, Supply and Lay joint through butt fusion the following including connecting to the Tanks and GI pipes				
5.0.4	Supply, deliver, fit and test 40mm (1.5") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	900		-
5.0.5	Single Orifice Air relief valve 1" diameter fitted with all accessories	No	1		-
5.0.6	Pegler gate valve 2" diameter	No	2		-
5.0.7	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with steel frame, cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	2		-
	Sub Total				-

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BILL 6.0 CONSTRUCTION OF YIUMO-KWA NYAMAI-JUNCTION -MITING'ANI PIPELINE					
S/No	Item description	Unit	QTY	RATE	Amount Ksh
6.0.1	Bush clear and excavate to pipe invert level 800 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	4,000		-
6.0.2	Excavate for 450mm wide x 800mm deep channel at road crossings and stockpile soil material for reuse. Prepare channel bed for pipe laying	M	50		-
6.0.3	e.o in hard/ rock	m ³	10		-
6.0.4	Supply, deliver, fit and test 75mm (2.5") diameter HDPE pipe PN 10 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	1000		-
6.0.5	Supply, deliver, lay in trench and backfill 50 mm Ø pipe (2") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	36		-
6.0.6	Supply, deliver, fit and test 63mm (2") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	2000		-
6.0.7	Supply, deliver, fit and test 40mm (1.5") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	1000		-
6.0.8	Supply, deliver, lay in trench and backfill 40 mm Ø pipe (1.5") GI Pipe class B including joining to HDPE pipes above in sections directed by the supervising engineer	M	24		-
	Allow a provisional sum of Kshs. 25,000 for Pipe Reducing Sundries	Item	1		
	Supply and fit the following pipe fittings into the pipeline as directed				

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6.0.9	Pegler gate valve 2.5" diameter	No	1		-
6.0.10	Pegler gate valve 2" diameter		3		-
6.0.11	Pegler gate valve 1.5" diameter		3		-
6.0.12	HDPE Reducing Tee 2'-1.5"	No	2		-
6.0.13	Supply, deliver and install pressure relief valves 2" diameter fitted into 2" and 1.5" pipeline with all accessories	No	6		-
6.0.14	Supply, deliver and install Double orifice air valve 2" diameter fitted into 2.5" pipeline with all accessories	No	2		-
6.0.15	2.5" bulk water master meter	No.	1		-
6.0.16	Construct and Commission Kwa Musivali Community Water Point, inclusive of Plumbing, Fittings & Consumer Water Meter in a lockable 0.75m X 0.75m chamber, as directed by Site Engineer.	item	1		-
6.0.17	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with steel frame, cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	5		-
	Ukia Junction Kiosk and Miting'ani Primary School Pipeline Connection				
6.0.18	Supply, deliver, fit and test 40mm (1.5") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	500		-
	SUB TOTAL				-
BILL 7.0	Iviani Return Line & Communal Water Point Infrastructure				
S/No	Item Description	Unit	QTY	Rate	Amount
7.0.1	Allow for All Distribution Lines - Tank Outlet Connection and Reducing Sundries Including Chambers	L/Sum	1		-

GOVERNMENT OF NAKUENI COUNTY
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7.0.2	Excavate to pipe invert level 600 mm n.e 1m below existing ground level and backfill/ reinstate to original ground level after testing pipeline, all to the approval of the engineer	m	1050		-
7.0.3	Supply, deliver, fit and test 40mm (1.5") diameter HDPE pipe PN 12.5 manufactured under ISO 4427 standards using virgin PE90 material (Smooth Wall), fully printed with technical details. Cost includes adapters and connectors	m	1050		-
7.0.4	1.25" Dia. bulk water master meter	No.	1		-
7.0.5	Pegler Gate Valve 1.5" Dia	No.	3		-
7.0.6	HDPE End Cap 40mm dia	No	2		-
7.0.7	1.5" Equal Tee HDPE	No	2		-
7.0.8	Construct 1.0m x 1.0m x 0.75m (deep internal dimensions) brick walled chambers with steel frame, cover and locking devices in specified areas by the supervising engineer as per the provided drawing	No	2		-
7.0.9	Construct and Commission a Community Water Point, inclusive of Plumbing, Fittings & Consumer Water Meter in a lockable 0.75m X 0.75m chamber, as directed by Site Engineer.	item	1		-
Sub Total					-
BILL 8 STANDARD WATER KIOSK 3m x2.5m					
A Water kiosk Substructure (all provisional)					
8.0.1	Clear the site off all bushes, including grubbing up all undergrowth and burn the arising on site as directed	m ²	5		-
8.0.2	Cut to spoil top soil average 250mm deep and dump on site as directed.	m ²	5		-
8.0.3	Excavate trenches for strip foundation not exceeding 1.5m deep from striped level	m ³	10		-
8.0.4	Load, cart away and spread extra excavation material on site as directed by the engineer	m ³	9		-

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 Chief officer:
 David Mwangi M. Mwangi, Chairman

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8.0.5	Backfill and ram selected excavated material to sides of foundation	m ³	8		-
	Walling				
8.0.6	200mm rough dressed natural stone wall in cement: sand mortar (1:4)	m ²	16		-
	Filling				
8.0.7	Subgrade fill in cut to a maximum thickness of 300mm using approved hardcore compacted in layers not exceeding 150mm thick	m ³	3		-
8.0.8	Blinding: Use 50mm thick murram or other equal and approved blinding materials to surface of hardcore (m.s)	SM	3		-
8.0.9	Blinding: Use concrete ratio (1:4:8) to create a 50mm thick blinding under strip foundation	m ²	3		-
8.0.10	Foundations: use RC 1:2:4	m ³	1		-
8.0.11	150mm floor slab: use RC 1:2:4	m ²	3.2		-
	Sawn formwork as described to:-				
8.0.12	Sides of foundation	SM	16		-
8.0.13	Edges of slab 75mm-150mm girth	L-M	7		-
	High tensile Reinforcement bars to BS. 4461 including cutting, bending and all necessary spacer blocks. (Provisional)				
8.0.14	10mm diameter	Kg	50.4		-
8.0.15	8mm diameter	Kg	25		-
	Mild steel Reinforcement bars to BS. 4449 including cutting, bending and all necessary spacer blocks. (Provisional)				
8.0.16	B.R.C A98 mesh reinforced to engineers specification	m ²	5		-
	Water disposal				
8.0.17	Allow for keeping all excavations clear of surface and running water	ITEM	1		-

GOVERNMENT OF NAKUENI COUNTY

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Chief officer:
Environment & Climate Change

Geass

	Plunking and strutting				
8.0.18	Allow for plunking and strutting to sides of all excavation to keep excavation free from all fallen materials.	ITEM	1		-
	Plinth finishes				
8.0.19	12mm thick plaster to plinth	m ²	3		-
8.0.20	Prepare and apply two coats of black bituminous paint to plastered surface	m ²	3		-
	B Water kiosk SUPERSTRUCTURE				
	R.C SUPERSTRUCTURE:-				
	Reinforced concrete (1:2:4) as described to:				
8.0.21	Ring beams	m ³	0.8		-
8.0.22	150mm suspended roof slab	m ³	1.8		-
	High tensile Reinforcement bars to BS. 4461 including cutting, bending and all necessary spacer blocks. (Provisional)				
8.0.23	10mm diameter	kg	64.5		-
8.0.24	8mm diameter	kg	20.5		-
	Sawn formwork as described to:-				
8.0.25	Sides and soffits of beams	m ²	8		-
8.0.26	Soffit of suspended slab	m ²	12		-
8.0.27	Edges of suspended slab 100mm-150mm girth	LM	8		-
	WALLING:-				
	Quarry dressed stone or other equal and approved wall bedded and jointed in cement : sand (1:3) mortar:-				
8.0.28	200mm thick externally	m ²	16		-
	Precast concrete blocks in wall bedded and jointed cement: sand (1:3) mortar				

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8.0.29	Approved 200mm wide damp proof course laid to breaking joints with 150mm laps in cement: sand (1:3) mortar.	LM	12		-
DOORS(All to Architects details)					
8.0.30	Purpose made steel door size 900 x 2100mm with permanent vents complete with frame, hinges, locks, hold back lugs and one coat of manufacturer's primer to the architects details and approval.	No	1		-
8.0.31	1300MMX1200MM OVERALL SIZE STEEL FRAMED DOUBLE OPENING WINDOW WITH 25MM THICK STEEL window fixed as shown in drawing	No.	1		-
Painting					
Prepare and apply three coats of oil paints to:-					
8.0.32	General metal surfaces	m ²	4		-
FINISHES					
Floors					
Cement: Sand (1:4) in :-					
8.0.33	32mm thick cement and sand screed finished smooth and hard with steel float	m ²	4		-
Skirting					
8.0.34	100 X 20mm mortar skirting with a rounded edge and coved at junction with floor.	LM	7		-
Walls					
8.0.35	12mm thick cement and sand (1:4) plaster to walls and beams internally.	m ²	17		-
8.0.36	Ditto externally	m ²	17		-
Painting					
Prepare and apply three coats sky blue emulsion paint to					
8.0.37	Internal wall and beam surface	m ²	17		-

GOVERNMENT OF SHARADA COUNTY

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8.0.38	Externally ditto	m ²	17		-
	Ceiling				
	Cement: Sand (1:4) in :-				
8.0.39	12mm thick plaster render to soffits of suspended slab	m ²	12		-
8.0.40	Prepare and apply three coats of plastic emulsion to Plastered surfaces	m ²	12		-
	C 3CM Plastic tank and plumbing works				
8.0.41	Supply, deliver and install 3m3 Plastic tank	No	1		-
	Supply, install and test float valves to the tanks	No	1		-
8.0.42	Allow a provisional sum for 1½" Ø GI supply pipe from tank into kiosk, 1" Ø PPR plumbing works inclusive of Tees in water kiosk	Item	1		
8.0.43	Galvanised iron Gate valves (Pegler) 25mm (1"Ø)	No	2		-
8.0.44	Water meter 1"	No	1		-
8.0.45	Ball cork water taps	No	3		-
	Total for 1 No. water kiosk (A+B+C)				
	Total for 3No. Water Kiosks (Kwa Nyamai, Miting'ani and Kaseveni Water Kiosks)				-
	SUMMARY				
BILL 1.0	Preliminaries				
BILL 2.0	Solar Pumping System				-
BILL 3.0	Rising Main				-
BILL 4.0	Construction of Yumo - Kaseveni Gravity Mains				-
BILL 5.0	Kwa Muumbika Pipeline extension				-
BILL 6.0	Construction of Yumo-Kwa Nyamai-Ukia Junction - Mitingani Pipeline				
BILL 7.0	Iviani Return Line & Communal Water Point Infrastructure				-

GOVERNMENT OF MAKUENI COUNTY
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BILL 8.0	Standard Water Kiosk 3m x2.5m (2No - Miting'ani and Kaseveni)				
	SUB TOTAL A				-
	Contingencies				
BILL 9.0	Allow Kshs 140,000 for contingencies to be expended at the discretion of the project manager				140,000.00
	SUB TOTAL (BUILDER WORKS)				-
	GRAND SUMMARY				
	BUILDER WORKS				
	PS				
	GRAND TOTAL				

GOVERNMENT OF KENYA
 ARUENI COUNTY

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