



The Republic of Uganda

MINISTRY OF WATER AND ENVIRONMENT

CIVIL WORKS FOR OFF-FARM IRRIGATION INFRASTRUCTURE AND FACILITIES

Volume 3: Bills of Quantities

Proc. Ref. No.: MWE/WRKS/24-25/...../3

LOT 3 EASTERN PROVINCE AREA

Issued on:January 2025

Bill/ Scheme ID.	Description			Amount (UGx.)
	GENERAL			
PG	Preliminaries and General Ite	ems		
GI.1	Method Related Charges			
DW	Dayworks			
	SUB TOTA	L 1		
	WORK ITEMS			
Cluster No.	Scheme Name	Туре	District	
1.1	Kapsarur	GFS	Bukwo	
1.2	Kululu / Sityo	GFS	Bukwo	
1.3	Lwongon	GFS	Bukwo	
1.4	Kongta Tulwo	GFS	Bukwo	
1.5	Weere/ Bosha	GFS	Kapchorwa	
1.6	Tuikat	GFS	Kween	
1.7	Mutufu	SPIS	Sironko	
2.1	Luwambi	GFS	Budaka	
2.2	Nalwanza	GFS	Bududa	
2.3	Iyolwa/ Geno SIS	SPIS	Tororo	
2.4	Mukuju	SPIS	Tororo	
2.5	Nankusi	GFS	Mbale	
2.6	Buwerebe	SPIS	Manafwa	
3.1	Obajai	SPIS	Kaberamaido	
3.2	Ajulon/ Abirabira	SPIS	Kaberamaido	
3.3	Totolim / Eden Farm	SPIS	Kumi	
3.4	Kagologolo	SPIS	Serere	
3.5	Kitukilo/ Minani	SPIS	Bugweri	
3.6	Luwanula/ Imanyiro	SPIS	Mayuge	
4.1	Bumooli	SPIS	Manayingo	
4.2	Namaboni	SPIS	Namayingo	
4.3	Namadope	SPIS	Luuka	
4.4	Bunamulungi (Lirima)	GFS	Namisindwa	
4.5	Nawampiti	SPIS	Kaliro	
	SUB TOTA	L 2	-	
	SUB TOTAL	1 + 2		
	Add 10% Conti	gencies		
	SUB TOTA	L 3		
	Add 18% V	/AT		
	GRAND TOTAL Carri	ed to Bid	Form	
GFS - Gravity Flow S	cheme. SPIS - Solar Powered Scheme			

GRAND SUMMARY

BILL No. PG : PRELIMINARIES AND GENERAL ITEMS

TEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
1.0	Contractual Requirement				
1.1	Performance Security PCC 49.1	Sum	1		
1.2	Advance Payment Guarantee - PCC 48.1	Sum	1		
1.3	Insurance of the Works - GCC 13	Sum	1		
2.0	Testing of Materials and Works				
2.1	Concrete cube tests as ordered by the Engineer; 4 No. per Scheme .	Nr	96		
2.2	Pressure testing & sterilisation of main lines	km	24		
2.3	Witness testing for Solar power systems	P.S	1	90,000,000	
2.4	Contractor's handling charge on all provisional sums under 2.3 above.	%	10		
3.0	Temporary works				
3.1	Provide, erect and maintain during the construction period 2No. sign boards per scheme at locations shown by the Engineer and in accordance with the Drawings and Specifications.	Nr	48		
3.2	De-watering; Allow for work in water affected areas, including all temporary works, pumping, protection, access, etc to ensure the works are completed as specified; include removal of facilities.	Sum	1		
3.3	Control and diversion of water from site and work areas to ensure the works are completed as specified. Rate to include removal of all temporary facilities and construction.	Sum	1		
3.4	Set up container converted to temprary office (20ft long by 8ft wide by 8ft 6 inch high) and with windows and doors, well maintained communication systems i.e. mobile, wireless internet etc. as directed and to the satisfaction of the Engineer.	Sum	1		
4.0	Provisional Sums				
4.1	Provision Sum for Client's administration and Supervision expenses	month	24	8,500,000	
4.2	Allow for Site Handover / Project Launch.	P.S	24	2,100,000	
4.3	Allow for Technical Commissioningat Completion.	P.S	24	2,100,000	
4.4	Resident Supervision vehicle running costs	P.S	24	4,200,000	
4.5	Contractor's handling charge on all provisional sums under 4.1a, 4.1b, 4.2, 4.3, 4.4a, & 4.4b above	%	10		
	ried to Collection			<u> </u>	
	No. PG Carried to Summary			I	

BILL No. GI.2 : METHOD RELATED CHARGES

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Method-Related Charges Other applicable Method-related Charges, if any, may be inserted by the Bidder.				
	Fixed charge items				
1.1	Mobilisation on site	sum	1		
1.2	Demobilise on completion of the Works	sum	1		
1.3	Supply and/or erect Contractor's site offices.	sum	1		
1.4	Remove Contractor's site offices on completion of the Works	sum	1		
	Time related charge items				
	Other applicable Time-Related Charges, if any, may be inserted by the Bidder.				
2.1	Maintain Contractor's site offices, including all services	month	24		
2.2	Contractors Superintendance of Works	month	24		
	Total Bill No. Gl. 1 Carried to Summary				
	i otal Bill No. Gl. 1 Carrieu to Summary				

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Personnel			<u> </u>	<u> </u>
DW1	Working ganger	hr	10		
DW2	Artisan	hr	10		
DW3	Semi-skilled	hr	10		
DW4	Unskilled	hr	100		
DW5	Driver for light vehicle	hr	7		
DW6	Driver for heavy vehicle	hr	10		
DW7	Operator for heavy equipment	hr	10		
	Materials				
DW8	Ordinary Portland Cement in 50 kg bags	t	1		
DW9	Coarse aggregate for concrete.	m³	1		
DW10	Fine aggregate for concrete.	m³	0.5		
DW11	Water for concrete	litres	10		
DW12	Sand for building	m³	0.5		
DW13	Sand for plaster	m³	0.5		
DW14	Fired Clay bricks for building.	nr	5,000		
DW15	Concrete blocks for building, 225mm for building,150mm thick	m²	0.5		
DW16	Concrete blocks for building, 225mm for building, 200 mm thick.	m²	0.5		
DW17	Hydrated lime for building 150 mm thick.	kg	1		
DW18	Timber, sawn.	m³	0.5		
DW19	Timber wrot.	m³	0.5		
DW20	High yield steel reinforcement:- 8-10 mm dia	ka	2,000		
DW20	12-16 mm dia.	kg ka	1,000		
DW21	Steel reinforcement fabric reference: A252	kg m²	5		
DW22	Hardcore filling	m ³	10		
DW23	Topsoil delivered to site and spread	m ³	50		
DVV24	Topson derivered to site and spread	III	50		
	Total Carried to Collection				

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	CONTRACTOR'S EQUIPMENT				× /
DW25	Road vehicles:Pick-up,1 1/2t.	hr	5	100,000	500,000
	Road vehicles: Lorries:				
DW26	Flat-5t capacity	hr	4		
DW27	Flat-10t capacity	hr	4		
	Tipping :				
G-1.21.28	5t capacity	hr	5		
G-1.21.29	10t capacity	hr	5		
	Water tankers with pump and hoses:				
DW30	5,000 Litre capacity.	hr	10		
	Excavator, face shovel or dragline:				
DW31	0.25 m ³ bucket.	hr	10		
DW32	0.5m ³ bucket.	hr	10		
DW33	1.0m ³ bucket.	hr	10		
	Super long reach boom Excavator:				
DW34	0.25 m ³ bucket.	hr	10		
DW35	0.5m ³ bucket.	hr	10		
DW36	1.0m ³ bucket.	hr	10		
	Tractors:				
DW37	Rubber tyred with trailer, 75 kw.	hr	10		
	Tracked including bull and angle dozer with ripper:				
	(i) 150 kw.	hr	10		
	(ii) 200 kw	hr	10		
	(iii) 250 kw.	hr	10		
	Rollers:				
DW38	Manual, 250 kg	hr	10		
DW39	vibratory, self, propelled, 1500 kg. Total Carried to Collection	hr	10		

BILL No. DW : DAY WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (UGX)	AMOUNT (UGX)
	Concrete mixers with weigh batchers and loading hoppers:			()	()
DW40	300 litre capacity.	hr	20		
DW41	400 litre capacity.	hr	20		
	Concrete vibrator, pneumatic with hoses:				
DW42	poker type, 50 mm	hr	10		
	Air compressor, mobile with 5m of hose and steels with:				
DW43	1 breaker.	hr	10		
DW44	2 breakers.	hr	10		
	Mobile electricity generating sets, 240v, 1 ph, 50 Hz:				
DW45	5 kvA	hr	2		
DW46	10 kvA	hr	2		
	Dewatering Pumps with motor and 5m suction, 3m delivery hose				
DW47	Norminal size 50mm.	hr	20		
DW48	Nominal size 100mm.	hr	20		
	Mobile Cranes: including slings chains, dogs and nips				
DW49	5t capacity	hr	5		
	Total Carried to Collection				
	COLLECTION				
	Page 1				
	Page 2				
	Page 3				
	Total Carried to Grand Summary				

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT
BILL SUMMARY

Bill No.	Description		Amount (UGx.)
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

SCHEME ID 1.1: KAPSARUR IN BUKWO DISTRICT BILL No. 1 : ABSTRACTION WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	Rate Only		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
5.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
	Fair Finish Plane Horizontal				
7.1	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m²	5		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
3.1	Nominal size, 12mm	t	2		
0.1	Total Carried to Collection	ι	2		

BILL No. 1 : A	ABSTRACTION WORKS
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tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	<u>Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,</u> cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing	No.	1		
	and locking arrangement.				
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
	Io. 1 : ABSTRACTION WORKS		1		A
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary			<u> </u>	

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
1	General Site Clearance General site clearance 1.5m wide working corridor along the pipeline	Item	1		
I	route, including felling trees, grabbing tree stumps and disposal of	Item	1		
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include_				
	unions/sockets, all to ISO 2531, of the following sizes.				
0.4			2		
2.1 2.2	DN125mm, not in trenches; DN125mm, in trenches; depth not exceeding 1.5m.	m m	3		
2.2	DN 125mm, in trenches, deptit not exceeding 1.5m.	111	5		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD140mm HDPE PN16	m	Rate Only		
4	uPVC Pipes				
•	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral				
	rubber ring socket joints laid in trenches to depths not exceeding 1.5m				
4.1	OD140 to PN 16	m	2,220		
	PIPEWORK - FITTINGS AND VALVES				
_	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN125mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.2	DN100 x OD100	No.	Rate Only		
5.3	DN150 x OD100	No.	Rate Only		

5.4.1 DN50 5.4.2 DN65 5.4.3 DN75 5.4.4 DN10 5.4.5 DN12 5.4.6 DN12 5.4.6 DN112 5.4.6 DN112 6.1 DN112 6.2 DN112 6.3 DN112 6.4 DN112 6.2 DN112 6.3 DN112 6.4 DN112 6.3 DN112 6.4 DN112 7 Bulk Valve Specc 7.1 DN112 7.1 DN112 7.1 DN112 8 Equal 8.1 OD9 8.2 OD111 9 Valve Flance Flance		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.4.2 DN68 5.4.3 DN75 5.4.4 DN10 5.4.5 DN12 5.4.6 DN12 5.4.6 DN12 6.1 DN11 6.1 DN11 6.2 DN11 6.1 DN11 6.2 DN11 6.3 DN11 6.4 DN11 6.4 DN11 7 Bulk valve spec main T 7.1 DN11 7.2 DN11 7.1 DN11 7.2 DN11 7.1 DN11 7.2 DN11 7.3 DN11 7.4 DN11 7.5 DN11 7.6 QU11 9 Valv 9 Valv Valv Flange	king Johnson Flanged adaptors as Aquafast to PN16				
.4.3 DN75 .4.4 DN10 .4.5 DN12 .4.6 DN12 .6.1 DN11 .6.2 DN11 .6.3 DN11 .6.4 DN11 .6.3 DN11 .6.4 DN11 .6.3 DN11 .6.4 DN11 .6.7 Bulk valve spec main N11 7.1 DN11 7.2 DN11 8 Equal 3.1 OD9 3.2 OD11 9 Valve Air V Flance	N50	No.	6		
.4.4 DN10 .4.5 DN12 .4.6 DN15 6 Junc 6 Junc 6.1 DN11 6.2 DN11 6.3 DN11 6.4 DN11 6.3 DN11 6.4 DN11 7 Bulk valve spec main main 7.1 DN11 7.2 DN11 7.1 DN11 7.2 DN11 8 Equa 8.1 OD9 8.2 OD11 9 Valve	N65	No.	1		
.4.5 DN12 .4.6 DN15 6 Junc All fli follow 6.1 DN12 6.2 DN13 6.3 DN12 6.4 DN12 6.3 DN12 6.4 DN12 7 Bulk valve spec 7.1 DN12 7.2 DN12 7.1 DN12 7.2 DN12 8.1 OD9 8.2 OD11 9 Valve	N75	No.	1		
.4.6 DN15 6 Junc All fl: follow 6.1 DN11 6.2 DN11 6.3 DN11 6.4 DN11 6.3 DN11 6.4 DN11 7 Bulk valve spec 7 Bulk 7 DN11 7 Bulk valve spec 7.1 DN11 7.2 DN11 7.2 DN11 8 Equa 8.1 OD9 8.2 OD11 9 Valve	N100	No.	Rate Only		
Cast Junc 6 Junc All fl: follow 6.1 DN1: 6.2 DN1: 6.3 DN1: 6.4 DN1: 6.4 DN1: 6.4 DN1: 7 Bulk Valve spec main 7.1 DN1: 7.2 DN1: 7.2 DN1: 8.1 OD9 8.2 OD1: 9 Valve Flance	N125	No.	16		
6 Junc All fl: follow All fl: follow 6.1 DN1: 6.2 DN1: 6.3 DN1: 6.4 DN1: 6.3 DN1: 6.4 DN1: 6.4 DN1: 6.4 DN1: 7 Bulk valve spec main 7.1 7.1 DN1: 7.2 DN1: 8 Equation in the second	N150	No.	Rate Only		
All fl: follov 6.1 DN1: 6.2 DN1: 6.2 DN1: 7 DN1: 6.3 DN1: 6.4 DN1: 7 Bulk 8.1 DN1: 7.2 DN1: 7.2 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 <u>Valv:</u> <u>Flanc</u>	ast or Spun Iron Pipe Fittings				
follov 6.1 DN1: 6.2 DN1: 6.2 DN1: 7 Fape All fl: ceme 6.3 DN1: 6.4 DN1: 7 Bulk valve spec main 7.1 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 <u>Valve</u> Flance	unctions and Branches				
follov 6.1 DN1: 6.2 DN1: 7 DN1: 6.2 DN1: 7 Bulk 7 Bulk 7 Bulk 7 Bulk 7 Bulk 7 Bulk 7 DN1: 7.1 DN1: 7.2 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 Valv Flanc	I flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
6.2 DN13 <i>Tape</i> All fl: ceme 6.3 DN12 6.4 DN12 7 <i>Bulk</i> <u>Bulk</u> valve <u>spec</u> main 7.1 DN12 7.2 DN13 PN11 8 Equa 8.1 OD9 8.2 OD11 9 <u>Valv</u> <u>Flanc</u>	llowing sizes;				
Tape All fl: ceme 6.3 DN1: 6.4 DN1: 7 Bulk 8 Bulk 7.1 DN1: 7.2 DN1: 7.1 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 Valv: Flance	N125mm	No.	5		
All fl: cema 6.3 DN1: 6.4 DN1: 7 Bulk 8 <u>Bulk</u> valve spec main 7.1 DN1: 7.2 DN1: 7.2 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 <u>Valv</u> Flanc	N150mm	No.	Rate Only		
ceme 6.3 DN1: 6.4 DN1: 7 Bulk Bulk valve spec main 7.1 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 Valve Flance	apers				
6.3 DN1: 6.4 DN1: 7 Bulk Valve spec main 7.1 DN1: 7.2 DN1: 8 Equa 8.1 OD9 8.2 OD1: 9 Valve Flance	I flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
6.4 DN1: 7 Bulk <u>Bulk</u> <u>Valve</u> <u>spec</u> <u>main</u> 7.1 DN1: 7.2 DN1: 9 PN1: 9 Valve <u>Flanc</u>	ement mortar lined, and of the following sizes;				
7 Bulk Bulk valve spec main 7.1 DN1: 7.2 DN1: 7.2 DN1: 8 Equa 0D9 8.1 OD9 8.2 OD1: 9 Valve Flance	N125 x 50mm	No.	5		
Bulk valve spec main 7.1 DN1: 7.2 DN1: 7.2 DN1: 8 Equa 0D9 8.2 OD1 9 Valve Flance	N125 x 65mm	No.	1		
valve spec main 7.1 DN1: 7.2 DN1: PN10 8 Equal 8.1 OD9 8.2 OD1: 9 Valve Flance	ulk Flow Meters				
spec main 7.1 DN1: 7.2 DN1: 7.2 DN1: 8 Equal 8.1 OD9 8.2 OD1: 9 Valv: Flance	ulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
main 7.1 DN1: 7.2 DN1: 7.2 DN1: PN1: PN1: 8 Equa 8.1 OD9 8.2 OD1: 9 Valv: Flance	lves, etc and all other fittings to make the installation complete, as				
7.1 DN1: 7.2 DN1: 9 PN10 8.2 OD1: 9 Valv: Flance	pecified, all fittings, including a masonry chamber, and on the following				
7.2 DN1: <u>PN10</u> 8 Equa 8.1 OD9 8.2 OD1 9 <u>Valv</u> <u>Flanc</u>	ain pipe sizes				
PN10 8 Equal 8.1 OD9 8.2 OD1 9 Valv Air V Flang	N125mm PN16	No.	1		
8 Equa 8.1 OD9 8.2 OD1 9 <u>Valv</u> <u>Air V</u> Flanc	N150mm PN16	No.	Rate Only		
8.1 OD9 8.2 OD1 9 <u>Valv</u> <u>Air V</u>	N16 HDPE Compression fitting to DIN 8074/BS 5114				
8.2 OD1 9 <u>Valv</u> <u>Air V</u> Flang	qual Adapters				
9 <u>Valv</u> <u>Air V</u> Flang	D90 female adapter	No.	Rate Only		
Air V Flang	D100 female adapter	No.	Rate Only		
Flang	alves and Penstocks				
	i <u>r Valves</u>				
2441	anged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO				
	41, complete with isolating gate valve to ISO 7259, flange adaptors, distance eces, and all fittings necessary to make the installation on pipes of the	1			
	lowing sizes, all to PN10, include chamber as specified.				
9.1 DN1	N125mm	No.	3		
9.2 DN1		No.	Rate Only		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
0.1	DN75mm	No.	1		
0.2	DN100mm	No.	Rate Only		
10.2	DN125mm	No.	4		
10.3	DN150mm	No.	Rate Only		
10.4	DN ISONITI	INU.	Tate only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	3		
11	Valve Surface Boxes				
••	Valve surface box for DN100 - DN300 valves, with lockable cover_				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	4		
	Pipe surrounds, of imported granular material, for the following pipe				
12.1	Not exceeding DN200mm	m	250		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	60		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection		•	·	

em Io.	Io. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				. ,
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN16	m	265		
2.2	OD75mm PN16	m	255		
2.3	OD90mm PN16	m	701		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
8.1	OD63mm	No.	2		
3.2	OD90mm	No.	1		
	<u>Unequal tees</u>				
3.1	OD75 x 63mm	No.	7		
3.2	OD90 x 63mm	No.	5		
3.3	OD90 x 75mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	End caps				
4	OD63mm	No.	28		
	Cast or Spun Iron Pipe Fittings				
	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
F	10, and of the following sizes	N	_		
5	DN125mm	No.	2		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
6.1	DN150 x 100	No.	Rate Only		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Viking Johnson Flanged adaptors as Aquafast.				
6.2	DN50	No.	1		
6.3	DN65	No.	1		
6.4	DN75	No.	1		
	Cast or Spun Iron Pipe Fittings				
	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	Rate Only		
7.2	DN125 x 50mm	No.	5		
7.3	DN125 x 65mm	No.	1		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
7.4	DN125 x 50mm	No.	2		
7.5	DN125 x 65mm	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
	Reducing Couplers/ Unions				
8.1	OD75 x 63mm	No.	4		
8.2	OD90 x 63mm	No.	1		
8.3	OD90 x 75mm	No.	1		
	Valves and Penstocks				
	<u>Air Valve</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO				
	2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance				
	pieces, and all fittings necessary to make the installation on pipes of the				
	following sizes, all to PN10, include chamber as specified.				
9	OD125mm	No.	3		
	Total Carried to Collection				

	E ID 1.1: KAPSARUR IN BUKWO DISTRICT o. 4 : DISTRIBUTION NETWORK				
Itom	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Washouts Washout as specified in the drawings, complete with plastic_ compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete_ installation on pipes of the following sizes; all to PN10 including valve_ surface box and stone masonry outfall structure to detail as per Drawing				
	DN50mm DN125mm	No. No.	Rate Only 4		
	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11	DN50mm	No.	26		
12	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	nr	52		
	Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
13	Not exceeding DN300mm	m	36		
	Total Carried to Collection o. 4 : DISTRIBUTION NETWORK				
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary				

SCHEME ID. 1.2: KULULU BUKWO DISTRICT

BILL SUMMARY

Bill No.	Description		Amount (UGx.)
-	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				/
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated	m²	840		
	topsoil and the preparation of surfaces at Intake Site.				

SCHEME ID. 1.2: KULULU BUKWO DISTRICT BILL No. 1 · ABSTRACTION WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE			1	(- 5.0)
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m²	5		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		
	Total Carried to Collection Io. 1 : ABSTRACTION WORKS				
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Inserts	-		/	(UGx.)
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				

SCHE	ME ID. 1.2: KULULU BUKWO DISTRICT				_
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Carried to Collection		1	1	
					•

Scheme ID. 1.2 Pg. 22 of 336

SCHEME ID. 1.2: KULULU BUKWO DISTRICT BILL No. 1 : ABSTRACTION WORKS

	IE ID. 1.2: KULULU BUKWO DISTRICT Io. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				. ,
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
	lo. 1 : ABSTRACTION WORKS	1		1	
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
2	<u>PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
2.1 2.20	DN150mm, not in trenches; DN150mm, in trenches; depth not exceeding 1.5m.	m m	3 3		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD100mm HDPE PN10	m	Rate Only		
4 4.1	<u>uPVC Pipes</u> uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches to depths not OD100 to PN 10	m	1,845		
	PIPEWORK - FITTINGS AND VALVES				
5	<u>Cast or Spun Iron Pipe Fittings</u> Bends				
5.1	<u>Galvanized iron threaded socket</u> 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 10; in trenches not exceeding 1.5 m				
5.2	<u>Viking Johnson stepped couplings as Maxistep</u> DN150 x 100	No.	Rate Only		
	Total Carried to Collection		<u> </u>	<u> </u>	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Viking Johnson Flanged adaptors as Aquafast to PN10				
5.3	DN50	No.	3		
5.4	DN65	No.	1		
5.5	DN100	No.	7		
5.6	DN150	No.	3		
0	Cast or Spun Iron Pipe Fittings				
6	<i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	<i>Tapers</i> All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd				
6.5	DN150 x 65mm	No.	1		
7	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings, including a masonry chamber, and on the following main pipe sizes				
7.1	DN150mm PN10	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
	Total Carried to Collection		<u>I</u>	1	

SCHEME ID. 1.2: KULULU BUKWO DISTRICT BILL No. 2 · TRANSMISSION MAINS

No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	DN125mm	No.	2		
10	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
0.1	DN125mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	2		
11	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
1.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
1.2	Not exceeding DN300mm	m	12		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS		1	т г	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
2.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				

÷		1		1	l		
12.2	Not exceeding DN200mm	m	60				
	Pipe surrounds, of mass concrete, for the following pipe sizes						
			_				
12.3	Not exceeding DN200mm	m	50				
13	Concrete Stools and Thrust Blocks						
	Three Dissis						
	Thrust Blocks						
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume						
	0.1-0.2 m ³ , for the following pipe sizes						
13.1	Diameter not exceeding DN200mm	No.	Rate Only				
	Other Pipework Ancillaries						
	Marker Posts						
14	Marker posts for pipes, gate valves, air valves, washouts	nr	92				
	Total Carried to Collection						
BILL N	Io. 2 : TRANSMISSION MAINS						
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount		
No.	Description	Unit	હાપુ.		(UGx.)		
	Bill No. 2 Collection						
	Page 6						
	Page 7						
	Page 8						
	Page 9						
	Total Bill No. 2 Carried to Bill Summary						
•							

DEMOLITION AND SITE CLEARANCE General Site Clearance Image: Clearance 1 General Site Clearance Item 2 Plastic Pressure Pipes Distribution m HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in m 1 trench to the following depths not exceeding 1.5m m 2.1 OD63mm PN10 m 650 2.2 OD110mm PN10, uPVC m 375 PIPEWORK - FITTINGS AND VALVES Mo. Rate Only 3.1 OD75mm No. Rate Only 3.2 OD110mm No. 6 <	ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
General Site ClearanceItem1General Site Clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.Item1PIPEWORK-PIPES Plastic Pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5mm2400D03mm PN10DDB3mm PN10, uPVCm65020OD75mm PN10m6502.1OD05mm PN10, uPVCm375PIPEWORK - FITTINGS AND VALVESm375PIPEWORK - FITTINGS AND VALVESNo.Rate Only2.1OD75mmNo.Rate Only2.2OD75mmNo.Rate Only3.3OD75 x 63mmNo.63.4OD110 x 63mmNo.33.5OD110 x 75mmNo.33.4OD101 x 75mmNo.33.5OD110 x 75mmNo.34.1OD63mmNo.34.2Cash and		DEMOLITION AND SITE CLEARANCE				(0011)
route, including felling trees, grabing tree stumps and disposal of arising materials. Image: stress of the st		General Site Clearance				
2Plastic Pressure Pipes Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5mm2402.1OD63mm PN10 OD5mm PN10 2.2OD75mm PN10 OD10mm PN10, uPVCm6503PIPEWORK - FITTINGS AND VALVES Plastic Pipe Fittings Equal teesm3753.1OD75mm OD75mm OD110mmNo.Rate Only Rate Only3.2OD75mm OD110mmNo.613.3OD75 x 63mm OD110 x 75mmNo.63.4OD110 x 63mm OD110 x 75mmNo.63.50OD110 x 75mm OD110 x 75mmNo.84Plastic Pipe Fittings End caps OD110 mmNo.64Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only	1	route, including felling trees, grabing tree stumps and disposal of	ltem	1		
2.1 OD63mm PN10 m 240 2.2 OD75mm PN10 m 650 2.2 OD110mm PN10, uPVC m 375 PIPEWORK - FITTINGS AND VALVES m 375 PIPEWORK - FITTINGS AND VALVES No. Rate Only 3.3 Equal tees No. Rate Only 3.1 OD75mm No. Rate Only 3.2 OD110mm No. 63 3.4 OD75mm No. 63 3.50 OD110 x 63mm No. 3 3.50 OD110 x 75mm No. 3 4.1 OD63mm No. 3 5 Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes No. Rate Only	2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
2.2 2.2 OD75mm PN10 OD110mm PN10, uPVCm650 m3PIPEWORK - FITTINGS AND VALVESm3754PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings Equal teesNo.Rate Only Rate Only3.1 0OD75mm OD110mmNo.Rate Only Rate Only3.2 0OD75 x 63mm OD110 x 63mmNo.6 	2.1		m	240		
PIPEWORK - FITTINGS AND VALVESNo.Rate Only3PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings Equal teesNo.Rate Only3.1OD75mm OD110mmNo.Rate Only3.2OD75mm OD110mmNo.Rate Only3.3OD75 x 63mm OD110 x 63mm OD110 x 75mmNo.6 3 34PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps OD110 x 75mmNo.35Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only			m			
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings Equal teesNo.Rate Only3.1OD75mmNo.No.Rate Only3.2OD110mmNo.No.Rate OnlyUnequal teesNo.No.63.3OD75 x 63mmNo.63.4OD110 x 63mmNo.3OD110 x 63mmNo.3OD110 x 75mmNo.3PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End capsNo.34End caps OD63mmNo.Rate Only4.1OD63mm OD63mmNo.Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.	2.2	OD110mm PN10, uPVC	m			
Plastic Pipe Fittings Equal teesNo.Rate Only3.1 3.2OD75mm OD110mmNo.Rate Only3.3 3.4 OD110 x 63mm OD110 x 75mmNo.63.4 OD110 x 75mmNo.63.50 OD110 x 75mmNo.34 4.1 OD63mm OD63mm OD110mm PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps OD110mmNo.Rate Only5 Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only		PIPEWORK - FITTINGS AND VALVES				
3 Equal tees 3.1 OD75mm 3.2 OD110mm 3.2 OD110mm Unequal tees No. 3.3 OD75 x 63mm 3.4 OD110 x 63mm 3.50 OD110 x 75mm VINC Rate Only Rate Only No. 8 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 4 End caps 4.1 OD63mm 4.2 OD110mm Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10. and of the following sizes						
3.2OD110mmNo.Rate OnlyUnequal teesNo.Rate Only3.3OD75 x 63mmNo.63.4OD110 x 63mmNo.30D110 x 75mmNo.30D110 x 75mmNo.3PN10 HDPE Compression fitting to DIN 8074/BS 5114No.3PN10 HDPE Compression fitting to DIN 8074/BS 5114No.3PN10 HDPE Compression fitting to DIN 8074/BS 5114No.3P010 HDPE Compression fitting to DIN 8074/BS 5114No.8P10 GrapsOD63mmNo.Rate OnlyA1OD63mmNo.Rate OnlyA2OD110mmNo.Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.	3					
Unequal teesNo.63.3OD75 x 63mmNo.63.4OD110 x 63mmNo.33.50OD110 x 75mmNo.30D110 x 75mmNo.34PN10 HDPE Compression fitting to DIN 8074/BS 5114No.3PN10 HDPE Compression fitting to DIN 8074/BS 5114No.3Plastic Pipe FittingsNo.84.1OD63mmNo.Rate Only0.003mmOD110mmNo.Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo	3.1	OD75mm	No.	Rate Only		
3.3 3.4OD75 x 63mm OD110 x 63mm OD110 x 75mmNo.6 No.3.50OD110 x 75mmNo.3 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps OD63mm OD110mmNo.Rate Only No.4 Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only	3.2	OD110mm	No.	Rate Only		
3.4OD110 x 63mm OD110 x 75mmNo.33.50PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps OD63mm OD110mmNo.Rate Only Rate Only4.1Cass OD63mm OD110mmNo.Rate Only Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only		Unequal tees				
3.50OD110 x 75mmNo.3PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps 0D63mm 0D110mmNo.Rate Only Rate Only Rate Only4.1OD63mm OD10mmNo.Rate Only Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only	3.3	OD75 x 63mm	No.	6		
APN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings End caps 0D63mm 0D110mmNo.Rate Only Rate Only Rate Only4.1OD63mm OD110mmNo.Rate Only Rate Only Rate Only5Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizesNo.Rate Only Rate Only	3.4	OD110 x 63mm	No.	3		
4 End caps 4.1 OD63mm 0.063mm No. 0.110mm No. 8 End caps 0.110mm No. 8 End caps 0.110mm No. 8 End caps 9 Cast or Spun Iron Pipe Fittings 8 Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes	3.50	OD110 x 75mm	No.	3		
 4.1 OD63mm 4.2 OD110mm Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes 						
4.2 OD110mm No. Rate Only 5 Cast or Spun Iron Pipe Fittings 6 Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes	4	End caps				
5 Cast or Spun Iron Pipe Fittings 5 Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes			-	-		
5 Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes	4.2	OD110mm	No.	Rate Only		
Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes						
10, and of the following sizes	5					
	5.1	-	No.	2		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 10; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	Viking Johnson Florand adapters on Asusfast				
~ ~	Viking Johnson Flanged adaptors as Aquafast.		<u> </u>		
6.3	DN50	No.	3		
6.4	DN65	No.	1		
6.5	DN100	No.	7		
6.60	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
1.2		140.			
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
7.3	DN150 x 65mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD90 x 63mm	No.	1		
8.2	OD90 x 75mm	No.	1		
8.3	OD110 x 63mm	No.	1		
	Valves and Penstocks				
0					
9	<u>Air Valve</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD160mm	No.	1		
	Total Carried to Collection Io. 4 : DISTRIBUTION NETWORK				
tem				Г	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
10	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	· · · · · · · · · · · · · · · · · · ·				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per		1		

SCHEN	IE ID. 1.2: KULULU BUKWO DISTRICT				
10.1	DN150mm	No.	2		
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11	DN50mm	No.	22		
12	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	nr	34		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
13	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
BILL N	o. 4 : DISTRIBUTION NETWORK				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 13				
	Page 14				
	Total Bill No. 4.4 Carried to Bill Summary				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL SUMMARY

Bill No.	Description		 Amount (UGx.)
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the	m ³	35		
<u>_</u>	Engineer and preparation of excavated surfeces to receive hardcore fill.	3	45		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m³	4		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
3.1	Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	44		
3.3	Imported murram.	m³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated	m ²	840		
U	topsoil and the preparation of surfaces at Intake Site.	111	010		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Total Carried to Collection				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 1 : ABSTRACTION WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.1	Grade C15/10 Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
6.2	Reinforced Concrete Base Slabs, Toe, Key and Heel 200mm thick key and toe.	m³	5		
6.3	200mm thick base and heel slabs.	m³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m³	19		
6.5	200mm thick sump wall.	m³	41		
	200mm thick top slab.	m³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	<i>Fair Finish Plane Horizontal</i> Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m²	5		
7.2	<i>Fair Finish Plane Vertical</i> Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
7.3	<i>Finishing of top surfaces</i> Steel trowel finishing of top surfaces.	m²	20		
8.1	Reinforcement Deformed High Yield Steel High yield square twisted bars to BS 4449 and of the following sizes Nominal size, 12mm	t	2		
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	Total Carried to Collection				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				. ,
	Cast or Spum Iron Pipe Fittings. Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	MISCELLANEOUS METAL WORK Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Total Carried to Collection				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 1 · ABSTRACTION WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.3	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
	Io. 1 : ABSTRACTION WORKS		1	I I	Amount
ltem No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531, of the following sizes.				
2.9	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.7	OD160mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.4	OD160 to PN 10	m	3,640		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.6	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.7.4	DN150 x 00	No.			
	Viking Johnson Flanged adaptors as Aquafast to PN16				
5.7.8	DN100	No.	3		
5.7.10	DN150	No.	4		

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Cast or Spun Iron Pipe Fittings				
6	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd				
6.8	DN150 x 65mm	No.	1		
6.10	DN150 x 100mm	No.	2		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the				
	following main pipe sizes				
7.6	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.7	DN150mm	No.	8		
	Total Carried to Collection				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.7	DN150mm	No.	5		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
	Depth not exceeding 1.5m	No.	8		
11	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	2		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
	Total Carried to Collection				
BILL N Item No.	No. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12.2	Not exceeding DN200mm	m	220		(007.)
	Pipe surrounds, of mass concrete, for the following pipe sizes				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

	Not exceeding DN200mm	m	450		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	126		
	Total Carried to Collection				
	Io. 2 : TRANSMISSION MAINS	1	1	· · · · · ·	
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill Summary				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	20		
3	PIPEWORK - FITTINGS AND VALVES <u>PN10 HDPE Compression fitting to DIN 8074/BS 5114</u> <u>Plastic Pipe Fittings</u> <u>Equal tees</u>				
3.1 3.2	OD50mm OD63mm	No. No.	Rate Only Rate Only		
	Unequal tees				
3.3	OD110 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4 4.1	<u>End caps</u> OD63mm	No.	3		
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN125mm	No.	2		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Total Carried to Collection				

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x OD100	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.2	DN50	No.	3		
6.3	DN65	No.	1		
6.4	DN100	No.	7		
6.5	DN150	No.	3		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
7.3	DN150 x 65mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
8	Reducing Couplers/ Unions	NL.			
8.1	OD90 x 63mm	No.	1		
8.2	OD90 x 75mm	No.			
8.3	OD110 x 63mm	No.	1		
0	Valves and Penstocks				
9	Air Valve Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
9.3	OD90mm	No.	Rate Only		
9.4	OD110mm	No.	Rate Only		
	Total Carried to Collection		<u> </u>	1	
BILL N Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)

SCHEME ID. 1.3: LWONGON IN BUKWO DISTRICT

SCHEM	E ID. 1.3: LWONGON IN BUKWO DISTRICT				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
10.1	DN50mm	No.	Rate Only		
	DN65mm	No.	Rate Only		
	DN75mm	No.	Rate Only		
11	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connecor pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
	IU PINIU				
11.1	DN50mm	No	3		
11.1		No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
10			0		
12	Marker posts for pipes, gate valves, air valves, washouts	nr	2		
	Deinstatement				
	Reinstatement Roads				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
40	Net were die a DN200 were		Rate Only		
13	Not exceeding DN300mm	m	Rale Only		
	Total Carried to Collection o. 4 : DISTRIBUTION NETWORK				
			1		A.m. c
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.			-		(UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
	Total Bill No. 4.4 Carried to Bill Summary				0

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

D:11	Description	Amount (UGx.)
NO.		
	WORK ITEMS	
1	Abstraction Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

BILL No. 1 : ABSTRACTION WORKS Item Amount Rate (UGx.) Description Unit Qty. No. (UGx.) **General Site Clearance** 1 General site clearance, felling trees, grabing tree stamps and stripping of 1 Item topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Earthworks m^3 2.1 Excavation to form river/ stream diversion towards the intake / abstraction 35 structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill. 2.2 Ditto but for the Intake Structure m³ 45 2.3 Ditto but for the River Weir Structure 4 m³ Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -3.1 Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by m³ 55 the arm of an excavator. 3.2 Selected excavated material including topping with a 200mm thick layer of m³ 44 top/ vegetable soil. 3.3 Imported murram. m³ 18 m² 0 4 Single layer of geotextile laid to manufaturer's specifications Landscaping m² 840 5 Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site. IN-SITU CONCRETE Provision and Placing of Concrete **Ordinary Design Mix Concrete** Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -Total Carried to Collection

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

	Io. 1 : ABSTRACTION WORKS			т т	Amourt
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m ³	1		
	of the following thickness				
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m³	19		
6.5	200mm thick sump wall.	m³	41		
6.6	200mm thick top slab.	m ³	1		
0.0					
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and	m ²	5		
	/ or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m ²	145		
	charmfering and / or filleting of all exposed concrete corners.		-		
	Finishing of top surfaces	2			
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two	No.	2		
	faces of the concrete wall and of the following sizes, excluding supply of pipe.				
	Total Carried to Collection				

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

	Io. 1 : ABSTRACTION WORKS	1	[<u>т</u>	A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	8		
	complete andas shown in the drawings including fixing to precast concrete units				
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Total Carried to Collection	1	I	 	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

	SUMMARY Io. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.3	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
-	No. 1 : ABSTRACTION WORKS	1		[[A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary	I	I	<u> </u>	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

	SUMMARY Io. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				. ,
1	<u>General Site Clearance</u> General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of	Item	1		
	arising materials.				
2	<u>PIPEWORKS - PIPES</u> Steel Pipes				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	<u>HDPE Pipes</u> HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.7	OD160mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u> uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.4	OD160 to PN 10	m	5,040		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.6	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.7.4	DN150	No.	0		
- - - -	Viking Johnson Flanged adaptors as Aquafast to PN16		_		
5.7.8 5 7 10	DN100 DN150	No. No.	3		
0.1.10	Total Carried to Collection	NU.	Т	<u> </u>	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY

ltem No.	lo. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	Cast or Spun Iron Pipe Fittings				(00.)
6	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	5		
6.4	DN125 x 65mm	No.	1		
	Tapers Cont'd				
6.8	DN150 x 65mm	No.	1		
6.10	DN150 x 100mm	No.	2		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the				
	following main pipe sizes				
7.6	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.7	DN150mm	No.	8		
	Total Carried to Collection			<u> </u>	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

ltem	IO. 2 : TRANSMISSION MAINS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
10	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.7	DN150mm	No.	5		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	8		
11	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

BILL N	Io. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Not exceeding DN200mm	m	220		<i>i</i>
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	450		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts		400		
14	Marker posts for pipes, gate valves, air valves, washouts	nr	126		
	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill Summary				

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
0	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.2	OD63mm PN10	m	120		
2.3	OD75mm PN10	m	374		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
2					
3	Equal tees				
3.2	OD63mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
	Unequal tees				
3.9	OD75 x 63mm	No.	4		
5.9		INU.	4		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	End caps				
	OD63mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN50mm	No.	Rate Only		
5.2	DN65mm	No.	Rate Only		
5.3	DN75mm	No.	Rate Only		
	Total Carried to Collection				
ill r tem	Io. 4 : DISTRIBUTION NETWORK		1		Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
					(000.)

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

DILL J	UMMARY		1	1		
	Viking Johnson stepped adaptors as Maxistep					
6.1	DN100 x OD63	No.	Rate Only			
6.2	DN100 x OD 75	No.	Rate Only			
6.6	<u>Viking Johnson Flanged adaptors as Aquafast.</u> DN65	No.	1			
6.9	DN125	No.	2			
	Cast or Spun Iron Pipe Fittings					
7	Junctions and Branches					
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;					
7.1	DN125mm	No.	1			
	T					
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,					
	cement mortar lined, and of the following sizes;					
7.8	DN65 x 50mm	No.	Rate Only			
7.11	DN150 x 40mm	No.	Rate Only			
	PN10 HDPE Compression fitting to DIN 8074/BS 5114					
	Plastic Pipe Fittings					
8	Reducing Couplers/ Unions	NI-	0			
8.1	OD75 x 63mm	No.	2			
	Valves and Penstocks					
9	<u>Air Valve</u>					
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to					
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of					
	the following sizes, all to PN10, include chamber as specified.					
9.1	OD63mm	No.	Rate Only			
9.2	OD75mm	No.	Rate Only			
	Total Carried to Collection		<u>I</u>	<u>I</u>	<u> </u>	
					1	

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT

BILL SUMMARY BILL No. 4 : DISTRIBUTION NETWORK Item Amount Description Unit Rate (UGx.) Qty. (UGx.) No. 10 Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per 10.1 DN50mm No. Rate Only 10.2 DN65mm Rate Only No. Farm Gate Connections 11 Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -11.1 DN50mm No. 9 STRUCTURAL METALWORK Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings Rate Only 12.1 Span 3 - 5m at height not exceeding 2m. No. 1 12.2 Span 5.5 - 10m at height not exceeding 2m. No. Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts 15 13 nr Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Rate Only 14 Not exceeding DN300mm m **Total Carried to Collection**

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				

SCHEME ID. 1.4: KONGTA TULWO IN BUKWO DISTRICT BILL SUMMARY

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT BILL SUMMARY

Bill No.	Description		Amount (UGx.)
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

BILL No. 1 - ABSTRACTION WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		
	Total Carried to Collection				
BILL N	No. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE Provision and Placing of Concrete				(2011)

SCHEN	IE ID. 1.5: WERE IN KAPCHORWA DISTRICT	1	I	1 1	1		
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland						
	cement to BS 12, aggregate to BS 882 for the following structures: -						
	Grade C15/10						
	Blinding						
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m ³	1				
	of the following thickness	- 111					
	Grade C25/10						
	Reinforced Concrete Base Slabs, Toe, Key and Heel						
6.2	200mm thick key and toe.	m ³	5				
6.3	200mm thick base and heel slabs.	m ³	5				
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19				
	Č Č						
6.5	200mm thick sump wall.	m ³	41				
6.6	200mm thick top slab.	m ³	1				
0.0		111					
	Formwork						
	Formwork-Fair Finish						
7.1	Fair Finish Plane Horizontal						
	Plane fair finish horizontal formwork to the tops slab including charmfering	m ²	5				
	and / or filleting of all exposed concrete corners.		-				
	· · ·						
	Fair Finish Plane Vertical						
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m ²	145				
	charmfering and / or filleting of all exposed concrete corners.						
	Finishing of top surfaces						
7.3	Steel trowel finishing of top surfaces.	m ²	20				
	Total Carried to Collection	1		<u> </u>			
BILL N	lo. 1 : ABSTRACTION WORKS						
Item		stop slab. m³ 1 Fair Finish Image: Stab including charmfering ing of all exposed concrete corners. m² Plane Horizontal ish horizontal formwork to the tops slab including charmfering ing of all exposed concrete corners. m² Plane Vertical ish vertical and / or slightly slping formwork to walls including and / or filleting of all exposed concrete corners. m² Itap surfaces finishing of top surfaces. m² 145 Total Carried to Collection m² 20					
No.	Description	Unit	Qty.	Rate (UGx.)			
	Reinforcement				. ,		
	Deformed High Yield Steel						
	High yield square twisted bars to BS 4449 and of the following sizes						
8.1	Nominal size, 12mm	t	2				
	Inserts						
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two	No.	2				
	faces of the concrete wall and of the following sizes, excluding supply of pipe.						

1		I		I I
	PIPEWORK - FITTINGS AND VALVES			
	Cast or Spum Iron Pipe Fittings.			
	Cast of Spain non ripe rittings.			
	Flanged Reducers			
9.1	DN250 x 150mm	No.	1	
	Flange Adaptors			
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots,	No.	1	
	flanges to BS 4505, all to PN6.			
	Strainers			
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,			
	cement mortar lined, and of the following sizes: -			
9.3	DN 250 mm	No.	2	
	End Caps			
9.4	DN250mm flanged end cap.	No.	1	
	Valves and Penstocks			
	Gate Valves: Hand Operated			
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for			
	operation by tee key, with extension spindle not exceeding 1.5 metres long,			
	and of the following sizes:-			
9.5	150 mm ND	No.	1	
	Denote allow band are noted including band at all and distance and the			
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -			
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2	
	Total Carried to Collection			

	IE ID. 1.5: WERE IN KAPCHORWA DISTRICT	-			
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				. ,
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Assess Markala Osum				
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
X2	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X3	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
BILL N Item	Io. 1 : ABSTRACTION WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	ltem	1		
2	<u> PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
2.7 2.8	DN125mm, not in trenches; DN125mm, in trenches; depth not exceeding 1.5m.	m m	3 3		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.6	OD140mm HDPE PN16	m	Rate Only		
4 4.3	<u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with</u> <u>integral rubber ring socket joints laid in trenches to depths not</u> OD140 to PN 16	m	2,476		
5	PIPEWORK - FITTINGS AND VALVES Cast or Spun Iron Pipe Fittings Bends				
5.5	<u>Galvanized iron threaded socket 45^o bends, toBS EN 10242:1995, all to PN 10, and of the following sizes</u> DN125mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
5.7.2	<u>Viking Johnson stepped couplings as Maxistep</u> DN100 x OD 75	No.	Rate Only		

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5.7.9	<u>Viking Johnson Flanged adaptors as Aquafast to PN16</u> DN125	No.	5		
	Cast or Spun Iron Pipe Fittings				
6	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	3		
6.2	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
6.3	DN125 x 50mm	No.	4		
6.4	DN125 x 65mm	No.	2		
6.5	DN125 x 100mm	No.	Rate Only		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the following main pipe sizes				
7.5	DN125mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.6	DN125mm	No.	4		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.6	DN125mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
	Depth not exceeding 1.5m	No.	4		
11	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds Pipe surrounds, of selected excavated granular material, for the				
12.1	<u>following pipe sizes</u> Not exceeding DN200mm	m	Rate Only		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	60		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of mass concrete, for the following pipe sizes				. ,
12.3	Not exceeding DN200mm	m	50		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	66		
	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				

SCHEME ID. 1.5: WERE IN KAPCHORWA DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.2	OD63mm PN6	m	100		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
8.5	OD110mm	No.	1		
	Unequal tees				
.13	OD110 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	End caps	Na	5		
1.1	OD63mm	No.	5		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN50mm	No.	Rate Only		
	Total Carried to Collection Io. 4 : DISTRIBUTION NETWORK				
em		1	1	г – т	Amount

8 Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. DIS/NUC/SD/008, for the following mains sizes and all to PH10:- No. 5 8.1 DN50mm No. 5 9 Marker Posts Marker Posts No. 3 9 Marker Posts Marker Posts No. 3 9 Marker Posts No. 3 12 Not exceeding DN300mm m Rate Only Total Carried to Collection Bitl No. 4 : DISTRIBUTION NETWORK Unit Qty. Rate (UGx.) Amount (UGx.) Total Carried to Collection No. 9 Bitl No. 4 Collection Init Qty. Rate (UGx.) Amount (UGx.) Total Carried to Bill Summary	SCHEN	IE ID. 1.5: WERE IN KAPCHORWA DISTRICT				
distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - Image: Complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DNS0mm No. 5 9 Marker posts for pipes, gate valves, air valves, washouts No. 3 9 Marker posts for pipes, gate valves, air valves, washouts No. 3 12 Not exceeding DN300m m Rate Only 12 Not exceeding DN300m m Rate Only ElitL No. 4 : DISTRIBUTION NETWORK Item No. Bill No. 4 Collection 14 Page 10 Page 11 15 Page 11 Image: Page 10 Image: Page 10 16 Page 11 Image: Page 10 Image: Page 10 Image: Page 10 17 Page 11 Image: Page: Pag	8	Farm Gate Connections				
distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - Image: Complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - 8.1 DNS0mm No. 5 9 Marker posts for pipes, gate valves, air valves, washouts No. 3 9 Marker posts for pipes, gate valves, air valves, washouts No. 3 12 Not exceeding DN300m m Rate Only 12 Not exceeding DN300m m Rate Only ElitL No. 4 : DISTRIBUTION NETWORK Item No. Bill No. 4 Collection 14 Page 10 Page 11 15 Page 11 Image: Page 10 Image: Page 10 16 Page 11 Image: Page 10 Image: Page 10 Image: Page 10 17 Page 11 Image: Page: Pag		Make DN50mm Irrigation Water Supply Hydrant connection to the				
complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - . <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
Brawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: - No. 5 8.1 DN50mm No. 5 9 <u>Marker Posts</u> <u>Marker posts for pipes, gate valves, air valves, washouts</u> No. 3 9 <u>Marker posts for pipes, gate valves, air valves, washouts</u> No. 3 12 <u>Reinstatement</u> <u>Roads</u> 						
8.1 DN50mm No. 5 9 Marker Posts for pipes, gate valves, air valves, washouts No. 3 9 Marker posts for pipes, gate valves, air valves, washouts No. 3 10 Marker posts for pipes, gate valves, air valves, washouts No. 3 11 Reinstatement Roads No. 3 12 Not exceeding DN300mm m Rate Only 12 Not exceeding DN300mm m Rate Only Item Description Unit Qty. BILL No. 4 : DISTRIBUTION NETWORK Item Description Unit Qty. Rate (UGx.) Amount (UGx.) No. BIIL No. 4 Collection Page 10 Page 10 Page 11 Integration of page 11 Integration of page 11 Integration of page 11 Integration of page 11						
8.1 DN50mm No. 5 Image: state of the state o		a				
9 Other Pigework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts No. 3 3 1						
9 Marker Posts Marker posts for pipes, gate valves, air valves, washouts No. 3 9 Reinstatement Roads No. 3 10 Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes m Rate Only 12 Not exceeding DN300mm m Rate Only Marker Loads 12 Not exceeding DN300mm m Rate Only Marker Loads BILL Not exceeding DN300mm m Rate Only Marker Loads Bill No. 4: DISTRIBUTION NETWORK Unit Qty. Rate (UGx.) Amount (UGx.) Item No. Description Unit Qty. Rate (UGs.) Amount (UGs.) Page 10 Page 11 Page 11 Page 11 Integration of the page 11 I	8.1	DN50mm	No.	5		
9 Marker posts for pipes, gate valves, air valves, washouts No. 3 Image: Constraint of the constraint		Other Pipework Ancillaries				
Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate Only Image: Constraint of the following pipe sizes 12 Not exceeding DN300mm m Rate (UGx, Image: Constraint of the following pipe sizes Image: Constraint of the following pipe sizes 14 Image: Constraint of the following pipe sizes 15 Image: Constraint of the following pipe sizes 16 Image: Constraint of the following pipe sizes <		Marker Posts				
Roads Image: Seaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Image: Seaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Image: Seaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Image: Seaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes 12 Not exceeding DN300mm Image: Seaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Image: Seaking up, temporary and permanent reinstatement of gravel roads 12 Not exceeding DN300mm Image: Seaking up, temporary and permanent reinstatement of gravel roads Image: Seaking up, temporary and permanent reinstatement of gravel roads BILL Not exceeding DN300mm Image: Seaking up, temporary and permanent reinstatement of Collection Image: Seaking up, temporary and permanent reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Item Description Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporary and reinstatement of Gravel roads Image: Seaking up, temporatement of Gravel roads Image: S	9	Marker posts for pipes, gate valves, air valves, washouts	No.	3		
Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Image: State S						
for the following pipe sizes in		Roads				
for the following pipe sizes in		Breaking up, temporary and permanent reinstatement of gravel roads				
12 Not exceeding DN300mm m Rate Only Image: Constraint of the constra						
Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Bill No. 4 Collection Page 10 Image 11 Image 11 Image 10 Image 10 Image 11 Image 10 Image 10 Image 11 Image 10 <						
BILL No. 4 : DISTRIBUTION NETWORK Unit Qty. Rate (UGx.) Amount (UGx.) Item No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Bill No. 4 Collection Page 10 Item Page 10 Item Page 11 Item Page 11 Item Page 10 Item Page 11 Item Page 10 I	12	Not exceeding DN300mm	m	Rate Only		
Item No.DescriptionUnitQty.Rate (UGx.)Amount (UGx.)Bill No. 4 Collection Page 10 Page 11Page 10 Page 11Image 10 						
No. Description Onit Qty. Rate (UGx.) (UGx.) Bill No. 4 Collection Page 10 Image 10 Image 11 I		Total Carried to Collection				
NO. Image No.	BILL N			<u>I</u>		
Page 10 Page 11		Io. 4 : DISTRIBUTION NETWORK	Unit	Otv	Pate (IIGx)	Amount
Page 10 Page 11	Item	Io. 4 : DISTRIBUTION NETWORK	Unit	Qty.	Rate (UGx.)	
Page 11	Item	Io. 4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	
Page 11	Item	Io. 4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	
	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
Total Bill No. 4.4 Carried to Bill Summary	Item	Io. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10	Unit	Qty.	Rate (UGx.)	
	Item	lo. 4 : DISTRIBUTION NETWORK Description Bill No. 4 Collection Page 10 Page 11	Unit	Qty.	Rate (UGx.)	

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT BILL SUMMARY

Bill Description		Amount (UGx.)
WORK ITEMS		
1 Abstraction Works		
2 Transmission Mains		
3 Storage Reservoir Works	N/A	
4 Distribution Network		
Total Carried to Grand Summary		

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m³	4		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
3.1	as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by	m ³	55		
		2			
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		
	Total Carried to Collection				

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT BILL No. 1 : ABSTRACTION WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
6.1	Blinding 50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m²	5		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		
	Total Carried to Collection				
	Io. 1 : ABSTRACTION WORKS			<u> </u>	Am
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8.2	Inserts DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		

SCHEN	IE ID. 1.6: TUIKAT IN KWEEN DISTRICT	_			
	Cast or Spum Iron Pipe Fittings.				
9.1	Flanged Reducers DN250 x 150mm	No.	1		
9.2	Flange Adaptors DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
9.4	End Caps DN250mm flanged end cap.	No.	1		
	Valves and Penstocks Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Carried to Collection	I		1	

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT

	IE ID. 1.6: TUIKAT IN KWEEN DISTRICT Io. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
X2	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection Io. 1 : ABSTRACTION WORKS				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT BILL No. 2 · TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				. /
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531, of the following sizes.				
2.9	DN150mm, not in trenches;	m	3		
2.10	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.4	OD110mm HDPE PN10	m	1,166		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.1	OD110 to PN 10	m	Rate Only		
4.2	OD125 to PN 10	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.4	DN100mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.7.1	DN100 x OD63	No.	Rate Only		
5.7.2	DN100 x OD 75	No.	Rate Only		
	Total Carried to Collection	l	<u> </u>		
tem	Io. 2 : TRANSMISSION MAINS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
5.7.7	Viking Johnson Flanged adaptors as Aquafast to PN16 DN75	No.	Rate Only		

CONLIN		1	Ì	1	1	
6	Cast or Spun Iron Pipe Fittings <i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the					
	following sizes;					
6.1	DN100mm	No.	Rate Only			
	Tapers					
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,					
<u> </u>	cement mortar lined, and of the following sizes;	NI-	Rate Only			
6.3 6.4	DN125 x 50mm DN125 x 65mm	No. No.	Rate Only			
0.4 6.5	DN125 x 75mm	No.	Rate Only			
6.6	DN125 x 100mm	No.	Rate Only			
7	Bulk Flow Meters		-			
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,					
	valves, etc and all other fittings to make the installation complete, as					
	specified, all fittings, including a masonry chamber, and on the					
	following main pipe sizes					
7.4	DN100mm PN10	No.	1			
	PN16 HDPE Compression fitting to DIN 8074/BS 5114					
8	Equal Adapters					
8.2	OD100 female adapter	No.	2			
9	Valves and Penstocks					
	Air Valves					
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to					
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,					
	distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.					
9.5	DN100mm	No.	2			
	Total Carried to Collection				<u> </u>	

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.5	DN100mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
	Depth not exceeding 1.5m	No.	2		
11	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	4		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Total Carried to Collection				

SCHEME ID. 1.6: TUIKAT IN KWEEN DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	240		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	150		
13	Concrete Stools and Thrust Blocks				
	<i>Thrust Blocks</i> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume</u> 0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	12		
	<u>Other Pipework Ancillaries</u> Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	56		
	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
2 2.1	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m OD63mm PN10	m	70		
2.1	OD03mm PN10, <u>uPVC</u>	m	350		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	2		
	Unequal tees				
3.2 3.3	OD75 x 63mm OD110 x 63mm	No. No.	6 2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4 4.1	<u>End caps</u> OD63mm	No.	4		
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
5.1	10, and of the following sizes DN75mm	No.	1		
J. I		INU.			
	Total Carried to Collection				

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x OD63	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.2	DN50	No.	Rate Only		
6.3	DN65	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
			Ŭ		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
	Reducing Couplers/ Unions				
8	OD110 x 63mm	No.	2		
	Valves and Penstocks				
	Air Valve				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
			1		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				. ,
10	DN50mm	No.	2		
11	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	nr	2		
	<u>Reinstatement</u> Roads		-		
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
12	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
	Io. 4 : DISTRIBUTION NETWORK			1 1	A
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	48		
2.5	Soft / decomposed rock soils	m ³	12		
2.6	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	3	16		
	Marshy soils	m ³			
2.7	Soft / decomposed rock soils	m³	8		
3	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Total Carried to Collection				

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
4	Landscaping Turfing for lawns inside fenced off compound; including filling with	m²	40		
	excavated topsoil and preparation of surfaces.		70		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
_	Insitu Concrete	2			
5	75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on				
	concrete base slab (MS) ; complete with water tight jointing and finishing works				
7	to approval.		4		
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
8	the pipe and as shown in the drawings.	No	n		
0	200mm ND and not exceeding 0.5m length	No.	2		
	Total Carried to Collection			<u> </u>	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	Adaptors Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	-	8		
10	and Pump Sump.	m	0		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES				
40	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres				
	long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	8		
10	complete andas shown in the drawings including fixing to precast concrete units				
	Steel grating				
14.1 14.2	Galvanized iron Coarse Trash Screen as detailed in the drawings. Galvanized iron Fine Trash Screen as detailed in the drawings.	No. No.	1		
14.2		INO.			
	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab	Item	Rate Only		
	(MS) ; complete with a Single ND200mm flanged branch to receive a ND200				
45	gate valve. Branch height/ positioning to be determined on site.				
15	Internal diameter ; 1200x200mm				
16	Stone pitched Channel.	m	5		
10	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
ME1	to match rating of panel offered) 11.0kW submersible pump set, rated flow Q = 20 m ³ /hr., rated head H = 85m total head; set not to more than $5m$ below ground including Dry- run protection, 15kW Inverter, Controller with Data Module, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
	Total Carried to Collection				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
/IE11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	<u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the</u> following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS ltem Amount Description No. (UGx.) 75mm thick of 12 - 25mm size machine crushed aggregate cover under the 220 Х3 m² Solar Array laid onto a guage 500 polythene sheet. 2 X4 450mm diameter reinforced concrete pipe/ culvert m Pump House X5 Construct a 12.0m superficial area Pump House to detail as per Drawing Sum 1 No.OIS/NUC/PH/001. Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of X6a 50 m barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval. X6b Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of m 10 barbed wire on top; height 2-2.5m at the Pumping Station Site. Gates Χ7 Metal field gate to BS 3470; width 1.5m single leaf and height to match the No. 2 fence. Training of Operator's staff X8 Train Operator's staff in basic operation and maintenance procedures of all Sum 1 plant and equipment supplied as per the technical specifications and to the Project Manager's approval Operation and Maintenance Manuals Χ9 Provide Operation and Maintenance Manuals as specified and to the Project Sum 1 Manager's approval **Total Carried to Collection Bill No. 1 Collection** Page 2 Page 3 Page 4 Page 5 Page 6 Page 7 Total Bill No. 1 Carried to Bill Summary **BILL No. 2 : TRANSMISSION MAINS** Item Amount Unit Rate (UGx.) Description Qty. No. (UGx.) DEMOLITION AND SITE CLEARANCE **General Site Clearance**

SCHEME ID. 1.7: MUTUFU IN SIRONKO DISTR				
 General site clearance 1.5m wide working route, including felling trees, grabing tree arising materials. 	3 11	ltem	1	
PIPEWORKS - PIPES 2 <u>Steel Pipes</u>				
Galvanized iron pipes (Class B) with threa unions/sockets, all to ISO 2531 of the follo				
2.1 DN75mm, in trenches; depths not exceed	ing 1.5m	m	12	
3 <u>HDPE Pipes</u> HDPE pressure pipes to BS 3505, include trenches to depths not exceeding 1.5m	e unions/sockets, laid in			
3.1 OD75mm HDPE PN6		m	740	
4 <u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2</u> integral rubber ring socket joints laid in tre				
OD110 to PN 10 4.1 Depth not exceeding 1.5m		m	Rate Only	
PIPEWORK - FITTINGS AND VALVES				
Cast or Spun Iron Pipe Fittings 5 Bends Galvanized iron threaded socket 45° ben PN 10, and of the following sizes	ds, toBS EN 10242:1995, all to			
5.1 DN65mm		No.	4	
Total C	Carried to Collection			

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Bulk Flow Meters				//
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN65mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				(00x.)
10.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	36		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	20		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	40		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
	Total Carried to Collection		<u> </u>	<u> </u>	

	IE ID. 1.7: MUTUFU IN SIRONKO DISTRICT o. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Other Pipework Ancillaries				
14	<i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	No.	20		
	STRUCTURAL METALWORK				
	Fabrication and erection of rolled steel section pipe bridge complete as shown on drawings				
15.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		
15.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	Total Carried to Collection				
	o. 2 : TRANSMISSION MAINS				A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Page 11				
	Total Bill No. 2 Carried to Bill Summary				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	DEMOLITION AND SITE CLEARANCE				<u> </u>
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	4		

	IE ID. 1.7: MUTUFU IN SIRONKO DISTRICT o. 3 : STORAGE RESERVOIR WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
8.2	Grade C20	m ³	Rate Only		
8.3	Grade C25	m ³	Rate Only		
8.4	Grade C30	m ³	Rate Only		
	Total Carried to Collection			<u> </u>	
BILL N	o. 3 : STORAGE RESERVOIR WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 12				
	Page 13				
	Total Bill No. 3 Carried to Bill Summary				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(000,)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	ltem	1		
	route, including felling trees, grabing tree stumps and disposal of arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	240		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN6	m	740		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	6		
	Un a must fa a a				
3.2	<u>Unequal tees</u> OD90 x 63mm	No.	30		
3.2		INO.	30		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	<u>Couplers</u>				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	30		
	Total Carried to Collection				

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				//
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
7.1	DN75mm	No.	3		
7.2	DN50mm	No.	1		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
8.1	DN50mm	No.	30		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	STRUCTURAL METALWORK				
	Fabrication and erection of rolled steel section pipe bridge complete as				
	shown on drawings				
	onown on drawingo				

ltem No.	o.4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.1	Span 3 - 5m at height not exceeding 2m.	No.	Rate Only		X 7
10.2	Span 5.5 - 10m at height not exceeding 2m.	No.	Rate Only		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	32		
	Total Carried to Collection				
BILL N Item No.	o. 4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				(0000)
	Page 14				
	Page 15				
	Page 16				

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

BILL	. St	IMM	IAR	ľ

Bill	Description		Amount (UGx.)
No.			
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths				
3.1	<u>as shown in the drawings with the following materials: -</u> Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m ²	Rate Only		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		
	Total Carried to Collection		<u> </u>	<u> </u>	

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 1 : ABSTRACTION WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				. ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and	m ²	5		
	/ or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m ²	145		
	charmfering and / or filleting of all exposed concrete corners.				
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		
	Total Carried to Collection	·	-	<u> </u>	

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 1 · ABSTRACTION WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long, and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Carried to Collection				
ILL N	Io. 1 : ABSTRACTION WORKS				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK Ladders		_		
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete	m	8		
	units				

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

	IE ID. 2.1: LUWAMBI IN BUDUDA DISTRICT	i	i		
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
X2	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
	o. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(0011)
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN150mm, not in trenches;	m	3		
2.20	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
3	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD160mm HDPE PN10	m	Rate Only		
4	uPVC Pipes				
-	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.1	OD160 to PN 10	m	1,472		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN150mm	No.	4		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped couplings as Maxistep				
5.2	DN100 x OD100	No.	1		
5.3	DN150 x OD63	No.	1		
	Total Carried to Collection				
ILL N tem	Io. 2 : TRANSMISSION MAINS	[Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
F O	Viking Johnson Flanged adaptors as Aquafast to PN16				
5.3	DN75	No.	2		
5.4	DN100	No.	1		
5.5	DN150	No.	7		

SCHEN	IE ID. 2.1: LUWAMBI IN BUDUDA DISTRICT			
	Cast or Spun Iron Pipe Fittings			
6	Junctions and Branches			
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the			
	following sizes;			
6.1	DN150mm	No.	3	
6.2	DN150 x 50mm	No.	2	
6.3	DN150 x 100mm	No.	1	
	Tapers			
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,			
	cement mortar lined, and of the following sizes;			
6.4	DN125 x 50mm	No.	Rate Only	
6.5	DN125 x 65mm	No.	Rate Only	
6.6	DN125 x 75mm	No.	Rate Only	
	DN150 x 50mm	No.	Rate Only	
6.8	DN150 x 65mm	No.	1	
6.9	DN150 x 75mm	No.	Rate Only	
6.10	DN150 x 100mm	No.	Rate Only	
7	Bulk Flow Meters			
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,			
	valves, etc and all other fittings to make the installation complete, as			
	specified, all fittings, including a masonry chamber, and on the			
	following main pipe sizes			
7.1	DN150mm PN16	No.	1	
	PN16 HDPE Compression fitting to DIN 8074/BS 5114			
8	Equal Adapters			
8.1	OD90 female adapter	No.	Rate Only	
8.2	OD100 female adapter	No.	Rate Only	
ļ	Total Carried to Collection			

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	DN150mm	No.	2		
10	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.1	DN150mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	1		
11	Valve Surface Boxes				
••	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
	down pipe, complete as specified and to the following deptite				
11.1	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11.2	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
	IO. 2 : TRANSMISSION MAINS		1	1	
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
12	<u>Surrounds</u>				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
			1		

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

12.2	Not exceeding DN200mm	m	40		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	35		
13	Concrete Stools and Thrust Blocks				
	Thrust Blacks				
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	4		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	47		
	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item					Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill Summary				
	Total Bill No. 2 Carried to Bill Summary		[
ltem		Unit	Qty.	Rate (UGx.)	
tem	No. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ltem No.	Ao. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance			Rate (UGx.)	
tem	No. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE	Unit	Qty. 1	Rate (UGx.)	
tem No.	Io. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of			Rate (UGx.)	
ltem No.	No. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.			Rate (UGx.)	
1 2	Io. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m		1	Rate (UGx.)	
tem No. 1 2 2.1	No. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m OD75mm PN10	ltem	1	Rate (UGx.)	
ltem No. 1	Io. 4 : DISTRIBUTION NETWORK Description DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m	Item	1	Rate (UGx.)	Amount (UGx.)

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings			
3	Equal tees			
3.1	OD63mm	No.	1	
3.2	OD110mm	No.	1	
	Unequal tees			
3.3	OD75 x 63mm	No.	6	
3.4	OD90 x 63mm	No.	5	
3.5	OD110 x 63mm	No.	2	
3.60	OD110 x 75mm	No.	3	
	PN10 HDPE Compression fitting to DIN 8074/BS 5114			
	Plastic Pipe Fittings			
4	End caps			
4.1	OD63mm	No.	13	
	Cast or Spun Iron Pipe Fittings			
5	Bends			
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN			
	10, and of the following sizes			
5.1	DN75mm	No.	2	
	Total Carried to Collection			

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x OD63	No.	Rate Only		
6.2	DN100 x OD 75	No.	Rate Only		
6.3	DN100 x OD100	No.	Rate Only		
6.4	DN150 x OD100	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.5	DN50	No.	2		
6.6	DN65	No.	Rate Only		
6.7	DN75	No.	2		
6.8	DN100	No.	Rate Only		
6.9	DN125	No.	Rate Only		
6.10	DN150	No.	3		
7	Cast or Spun Iron Pipe Fittings Junctions and Branches				
·	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	2		
7.2	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD90 x 63mm	No.	3		
8.2	OD90 x 75mm	No.	1		
8.3	OD110 x 63mm	No.	2		
8.4	OD110 x 90mm	No.	1		
	Total Carried to Collection		<u>I</u>	<u> </u>	

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valves and Penstocks				(0011)
9	Air Valve				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
10	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
11	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connecor pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
11.1	DN50mm	No.	13		
	Other Pipework Ancillaries				
	Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	No.	19		
	Reinstatement				
	Roads				
	NUAUS				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
13	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
	No. 4 : DISTRIBUTION NETWORK				A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				

SCHEME ID. 2.1: LUWAMBI IN BUDUDA DISTRICT

SCHEME ID. 2.1. LOWANDI IN BODODA DISTRICT								
Page 12								
1 ago 12								
Total Bill No. 4.4 Carried to Bill Summary					1			

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL SUMMARY

D:11	Description		Amount (UGx.)
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	General Site Clearance				<u> </u>
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	44		
3.3	Imported murram.	m³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		
	Total Carried to Collection			<u> </u>	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 for the following structures: -				
	centent to BS 12, aggregate to BS 662 for the following structures				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m ³	1		
	of the following thickness				
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	m ³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m ³	19		
6.5	200mm thick sump wall.	m ³	41		
6.6	200mm thick top slab.	m ³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and	m ²	5		
	/ or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m ²	145		
	charmfering and / or filleting of all exposed concrete corners.		110		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Carried to Collection				

Item	IO. 1 : ABSTRACTION WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	MISCELLANEOUS METAL WORK				· · · ·
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvernized to BS 729,	m	8		
	complete andas shown in the drawings including fixing to precast concrete				
	units				
	Access Manhole Cover				
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing	No.	1		
10.2	and locking arrangement.	110.	•		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of	No.	0		
	surface box by chain or bolt, include down pipe, complete as specified and to a				
	depth not exceeding 4.5 m.				
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Training of Operator's staff				
X2	Train Operator's staff in basic operation and maintenance procedures of all	Sum	1		
//L	plant and equipment supplied as per the technical specifications and to the	oum			
	Project Manager's approval				
	Operation and Maintenance Manuals	0			
X3	Provide Operation and Maintenance Manuals as specified and to the Project	Sum	1		
	Manager's approval Total Carried to Collection				
ILL N	lo. 1 : ABSTRACTION WORKS				
tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	-	•	с.у.		(UGx.)
	Bill No. 1 Collection				
	Page 2				
	1 490 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN150mm, not in trenches;	m	3		
2.2	DN150mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes				
3	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD160mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u>				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.1	OD110 to PN 16	m	Rate Only		
4.2	OD125 to PN 16	m	Rate Only		
4.3	OD140 to PN 16	m	Rate Only		
4.4	OD160 to PN 10	m	1,304		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to				
	PN 10, and of the following sizes				
5.1	DN150mm	No.	4		
	Total Carried to Collection				

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 2 . TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				× •
5.2	<u>Viking Johnson stepped couplings as Maxistep</u> DN150 x OD100	No.			
	Viking Johnson Flanged adaptors as Aquafast to PN16				
5.3	DN50	No.	2		
5.4	DN100	No.	7		
5.5	DN150	No.	6		
6	Cast or Spun Iron Pipe Fittings <i>Junctions and Branches</i> All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN100mm	No.	1		
6.2	DN150mm	No.	3		
	Tapers All flanged concentric taper to BS4772, flanges to BS4504 all to PN6, cement mortar lined, and of the following sizes;				
	Tapers Cont'd				
6.3	DN150 x 50mm	No.	1		
6.4	DN150 x 65mm	No.	Rate Only		
6.5	DN150 x 75mm	No.	Rate Only		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the following				
	main pipe sizes				
7.1	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
9	Valves and Penstocks Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
9.1	DN125mm	No.	Rate Only		
9.2	DN150mm	No.	1		
10	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.1 10.2	DN125mm DN150mm	No. No.	Rate Only 2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
	Depth not exceeding 1.5m	No.	1		
11	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	2		
	Total Carried to Collection				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement Roads				(0 0)
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
1.2	Not exceeding DN300mm	m	12		
12	<u>Surrounds</u> Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	75		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	85		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	Rate Only		
14	<u>Other Pipework Ancillaries</u> <i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	nr	54		
	Total Carried to Collection				

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT

Total Carried to Collection

tem No.	No. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill S	ummary		<u>. </u>	

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 2 : TRANSMISSION MAINS

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 4 · DISTRIBUTION NETWORK

DEMOLITION AND SITE CLEARANCE General Site Clearance 1 Hout Site Clearance 1 General Site Clearance 2 PIPEWORK - FirtingS AND VALVES PIN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings 3.1 OD110 x 63mm 3.2 OD110 x 63mm 3.30 OD110 x 75mm	ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.Item12PIPEWORK-PIPES Plastic Pressure Pipes to BS 3505, include unions / sockets, all to HDPE pressure pipes to BS 3505, include unions / sockets, all to Laid in trench to the following depths not exceeding 1.5mm360 		DEMOLITION AND SITE CLEARANCE				<i>iii</i> _ <i>i</i>
route, including felling trees, grabing tree stumps and disposal of arising materials.Image: constraint of the state of		General Site Clearance				
route, including felling trees, grabing tree stumps and disposal of arising materials.Image: constraint of the state of						
arising materials. PIPEWORK-PIPES 2 PIPEWORK-PIPES Plastic Pressure Pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m. m 2.1 OD63mm PN10 m 2.2 OD90mm PN10 m 2.3 OD110mm PN10 m 2.3 OD110mm PN10 m 2.3 OD110mm PN10 m 2.3 OD110mm PN10 m 2.4 Plastic Pipe Fittings No. 3.1 Equal tees No. 3.1 OD110 x 63mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings No. 1 3.1 OD110 x 63mm No. 1 9.101 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings No. 1 4 End caps I I	1		Item	1		
PIPEWORK-PIPES Plastic Pressure Pipes Distribution HDPE pressure Pipes Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5mm360 Rate Only 2952.1 2.2 2.3 2.1OD63mm PN10 OD90mm PN10 2.3 3 DD110mm PN10m360 Rate Only 2952.3 3.1 3.1Equal tees OD110mmNo.23.4 3.2 DD110 x 63mm OD110 x 75mmNo.13.2 4 4 End capsPN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.1						
2 Plastic Pressure Pipes - Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m m 360 2.1 OD63mm PN10 m 360 2.2 OD90mm PN10 m 360 2.3 OD110mm PN10 m 295 PIPEWORK - FITTINGS AND VALVES n 295 PIPEWORK - FITTINGS AND VALVES n 295 PIDEWORK - FITTINGS AND VALVES n 295 Vinequal tees n 20110mm 0.1 Unequal tees no. 2 3.1 OD110 x 63mm No. 1 3.2 OD110 x 63mm No. 1 9N10 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings No. 1 3.3 OD110 x 63mm No. 1 4 End caps I I		ansing materials.				
2Plastic Pressure Pipes Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5mm3602.1OD63mm PN10 OD90mm PN10m3602.2OD90mm PN10 OD110mm PN10m3602.3OD110mm PN10m295PIPEWORK - FITTINGS AND VALVESPN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.23.1Equal tees OD110mmNo.13.2OD110 x 63mm 		PIPEWORK-PIPES				
HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5mm3602.1OD63mm PN10mm3602.2OD90mm PN10mm295OD110mm PN10m295295PIPEWORK - FITTINGS AND VALVESNo.295PIN0 HDPE Compression fitting to DIN 8074/BS 5114No.2Jastic Pipe FittingsNo.2Junequal teesNo.13.1OD110 x 63mmNo.1Joint V Affer SimmNo.1Jastic Pipe FittingsNo.1Jastic Pipe FittingsNo.1	2					
trench to the following depths not exceeding 1.5mm3602.1OD63mm PN10mm360OD90mm PN10OD110mm PN10m295PIPEWORK - FITTINGS AND VALVESm295PIPEWORK - FITTINGS AND VALVESnnP10 HDPE Compression fitting to DIN 8074/BS 5114nnPlastic Pipe Fittingsno.20D110mmNo.2Jatic Pipe Fittingsno.1OD110 x 63mmNo.1OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114No.1PN10 HDPE Compression fitting to DIN 8074/BS 5114No.1PN10 HDPE Compression fitting to DIN 8074/BS 5114No.1PN10 HDPE Compression fitting to DIN 8074/BS 5114No.1Plastic Pipe FittingsNo.1						
2.2 2.3OD90mm PN10 OD110mm PN10m mRate Only 295PIPEWORK - FITTINGS AND VALVESIIPN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.23 3.1Equal tees OD110mmNo.2Jack PriceII3.2 3.30OD110 x 63mm OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.14End capsII						
2.2 2.3OD90mm PN10 OD110mm PN10m mRate Only 295PIPEWORK - FITTINGS AND VALVESIIPN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.23 3.1Equal tees OD110mmNo.2Jack PriceII3.2 3.30OD110 x 63mm OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.14End capsII	0.4			200		
2.3OD110mm PN10m295PIPEWORK - FITTINGS AND VALVESnn295PN10 HDPE Compression fitting to DIN 8074/BS 5114nnnPlastic Pipe FittingsNo.23.1Equal teesNo.2Unequal teesNo.13.2OD110 x 63mm OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.14End capsII						
PIPEWORK - FITTINGS AND VALVESImage: Pipe FittingsPN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.3.1Equal tees OD110mmNo.Unequal teesNo.23.2OD110 x 63mm OD110 x 75mmNo.PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.4End capsImage: Pipe Fittings				-		
PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.L3 3.1Equal tees OD110mmNo.2Unequal tees 0.0110 x 63mm OD110 x 75mmNo.13.2 3.30OD110 x 63mm OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.14End capsImage: Compression fitting to DIN 8074/BS 5114Image: Compression fitting to DIN 8074/BS 5114	2.3		m	290		
Plastic Pipe Fittings No. Plastic Pipe Fittings 3.1 Equal tees OD110mm No. 2 Junequal tees No. 1 3.2 OD110 x 63mm OD110 x 75mm No. 1 No. 1 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 1 4 End caps Image: Complex state		PIPEWORK - FITTINGS AND VALVES				
Plastic Pipe Fittings No. Plastic Pipe Fittings 3.1 Equal tees OD110mm No. 2 Junequal tees No. 2 3.2 OD110 x 63mm OD110 x 75mm No. 1 No. 1 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 1 4 End caps Image: Complexity of the pipe fitting for the pipe fitting f		PN10 HDPE Compression fitting to DIN 8074/BS 5114				
3 3.1Equal tees OD110mmNo.2Junequal teesNo.23.2 3.30OD110 x 63mm OD110 x 75mmNo.1PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe FittingsNo.14End capsImage: Compression fitting to DIN 8074/BS 5114Image: Compression fitting to DIN 8074/BS 5114						
3.1 OD110mm No. 2 Unequal tees No. 1 3.2 OD110 x 63mm No. 1 0.30 OD110 x 75mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114 4 End caps Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114		<u>`</u>				
3.2 OD110 x 63mm OD110 x 75mm No. 1 No. 1 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings No. 1 4 End caps Image: Caps and	3					
3.2 OD110 x 63mm No. 1 3.30 OD110 x 75mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114 4 End caps Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114	3.1	OD110mm	No.	2		
3.2 OD110 x 63mm No. 1 3.30 OD110 x 75mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 No. 1 Plastic Pipe Fittings Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114 4 End caps Image: Compression fitting to DIN 8074/BS 5114 Image: Compression fitting to DIN 8074/BS 5114						
3.30 OD110 x 75mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 1 Plastic Pipe Fittings 1 4 End caps		<u>Unequal tees</u>				
3.30 OD110 x 75mm No. 1 PN10 HDPE Compression fitting to DIN 8074/BS 5114 1 Plastic Pipe Fittings 1 4 End caps	3.2	OD110 x 63mm	No.	1		
Plastic Pipe Fittings 4 End caps			No.	1		
Plastic Pipe Fittings 4 End caps						
4 End caps						
		Plastic Pipe Fittings				
	4	Fud case				
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	4.1		INO.	Ő		

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN50mm	No.	2		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x 65	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.3	DN65	No.	Rate Only		
6.4	DN75	No.	Rate Only		
6.4	DN100	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
7.1	DN125mm	No.	Rate Only		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
7.2	DN125 x 50mm	No.	Rate Only		
7.3	DN125 x 65mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD110 x 63mm	No.	Rate Only		
8.2	OD110 x 75mm	No.	1		
8.3	OD110 x 90mm	No.	Rate Only		

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 4 · DISTRIBUTION NETWORK

Item	o. 4 : DISTRIBUTION NETWORK				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
-	Valves and Penstocks				
9	<u>Air Valve</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD63mm	No.	Rate Only		
9.2	OD75mm	No.	Rate Only		
9.3	OD90mm	No.	Rate Only		
9.4	OD110mm	No.	Rate Only		
10	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
10.1	DN50mm	No.	Rate Only		
10.2	DN65mm	No.	Rate Only		
10.3	DN75mm	No.	Rate Only		
10.4	DN100mm	No.	Rate Only		
11	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connecor pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
11.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection			<u> </u>	

Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	Reinstatement				(003.)
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
13	Not exceeding DN300mm	m	24		
	Total Carried to Collection				
BILL N Item	Io. 4 : DISTRIBUTION NETWORK				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 4 Collection				
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Page 13				
	Page 14				
	, , , , , , , , , , , , , , , , , , ,				
	Total Bill No. 4 Carried to Bill Summary			<u> </u>	

SCHEME ID. 2.2: NALWANZA IN BUDUDA DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL	SUMMARY

Bill Description	Amount (UGx.)
WORK ITEMS	
1 Abstraction and Electromechanical Works	
2 Transmission Mains	
3 Storage Reservoir Works	
4 Distribution Network	
Total Carried to Grand Summary	

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

ltem	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount
No.		•	_		(UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
2	Excavation to form trapezoidal reservior in soft ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	158		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
3.1	<u>as shown in the drawings with the following materials: -</u> Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	115		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	45		
4	Double layer of woven polythene sheet laid to approval.	m²	60.0		
	Landscaping				
5	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m²	1,050		
	Total Carried to Collection				

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.1 · ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10 ME10a	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. 6mm ² UV Single Cable.	m m	200 60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS
DILL NU. I . ADJI KACI IUN AND ELECI KUWECHANICAL WURKJ

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<i>Kerbs</i> <u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the</u> <u>following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	M²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

BILL N	IE ID. 2.3: IYOLWA IN TORORO DISTRICT 0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	<u>Pump House</u> Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	ltem	Rate Only		
	Total Carried to Collection				
BILL N Item	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	[]	Amount
No.	Description				(UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
4		ltom	4		
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
_	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.6	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
	······································				
3.3	OD90mm HDPE PN10	m	1,240		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10				
4.1	Depth not exceeding 1.5m	m	Rate Only		
T. I			,		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to				
	PN 10, and of the following sizes				
5.4	DN75mm	No.	4		
6	Dulk Flow Motore				
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
6.2	following main pipe sizes DN75mm PN10	No.	1		
0.2	Total Carried to Collection	NU.	<u> </u>	<u> </u>	
ILL N	Io. 2 : TRANSMISSION MAINS		I	ļ	
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.	PN16 HDPE Compression fitting to DIN 8074/BS 5114				(00.)
-	E word & days from				
7	Equal Adapters	N	_		
7.1	OD90 female adapter	No.	2		

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT

	IE ID. 2.3: IYOLWA IN TORORO DISTRICT			1	i i
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.4	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.2	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10a	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10b	Depth not exceeding 1.5m	No.	1		
100		INU.			
	Total Carried to Collection	I <u> </u>	1	1	

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	30		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	50		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	60		
13	Concrete Stools and Thrust Blocks				
	<i>Thrust Blocks</i> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume</u> <u>0.1-0.2 m³, for the following pipe sizes</u>				
13.1	Diameter not exceeding DN200mm	No.	4		
	<u>Other Pipework Ancillaries</u> Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	44		
BILL N	Total Carried to Collection No. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FAC	CILITIES: LOT 3 EA	STERN PRO	VINCE AREA
SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT		1	
Page 7			
Page 8			
Total Bill No. 2 Carried to Bill Summary			

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No. 4.3 · STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				<i>/</i> /
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	ltem	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
	ionowing height and reservor capacities.				
2.4	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GL				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
10	element and seal ring :-	Na	4		
4.2	DN75mm, PN6	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
	[OPTIONAL]				
5.2	DN75mm, PN10	No.	1		

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No. 3 · STORAGE RESERVOIR WORKS

BILL N	o. 3 : STORAGE RESERVOIR WORKS	r			
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	o. 3 : STORAGE RESERVOIR WORKS	ſ	1		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				
	Trial D'UNE 2 Original de D'U O				
	Total Bill No. 3 Carried to Bill Summary				

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No.4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of	ltem	1		
	arising materials.				
-	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.3	OD90mm PN6	m	140		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.2	OD90mm	No.	1		
	Unequal tees				
3.7	OD90 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps	NI-	Rate Only		
5.1 5.2	OD110mm OD90mm	No.	Rate Only Rate Only		
5.2 5.3	OD75mm	No. No.	Rate Only		
5.3 5.4	OD63mm	No.	1		
5.5	OD50mm	No.	Rate Only		
	Total Carried to Collection				

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.2	OD90mm	No.	Rate Only		
6.3	OD75mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
7.2	DN75mm	No.	Rate Only		
7.3	DN65mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.4	DN50mm	No.	1		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	Rate Only		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 12				
	Page 13				

SCHEME ID. 2.3: IYOLWA IN TORORO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

BILL No.1 : ABSTRACTION AND ELECTROME	CHANICAL WORKS
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ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				/
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Landscaping				
2	Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240m ² at Intake Site and 800m ² at Pump Station.	m²	1,050		
3	Reinforced concrete pipe support to detail as per Drawings.	No.	2		
	MISCELLANEOUS METAL WORK				
	Pump Protection System				
4.1	Diagonal pipe sleeve pump anti-vandal protection structure to detail as per Drawing No. OIS/NUC/SD/010.	Item	1		
4.2	Purpose -made pipe support structure made of welded GI pipes to detail as per Drawing No. OIS/NUC/SD/010.	Item	1		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 75m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		

ľ	DUL N. 4. ADOTDAOTION AND ELECTROMEQUANICAL WORKS
	BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	o.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	ltem	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	16mm ² Borehole drop cable,	m	5		
ME10	16mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
	Total Carried to Collection			<u> </u>	

1			
BILL No.1	: ABSTRACTION AND	ELECTROMECHANICAL WOR	₹KS

battery box Alarm System ME16 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors Item 1 ME17 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensor for the pump protection as instructed by the Engineer. Item 1 MIE17 GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. Item 1 MISCELLANEOUS WORKS Item 1 1 X1 Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004. No. 1 <i>Kerbs</i> Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: - 70 X2 Straight or curved to a radius exceeding 12 m m 70 X3 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet. m 0 X4 450mm diameter reinforced concrete pipe/ culvert m 0 X5 Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Sum 1	ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME16 GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array. Item 1 ME17 GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer. Item 1 ME17 GMS CELLANEOUS WORKS Item 1 MISCELLANEOUS WORKS Item 1 X1 Pump Protection System No. 1 Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004. No. 1 X2 Straight or curved to a radius exceeding 12 m m 70 X3 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet. m 0 X4 450mm diameter reinforced concrete pipe/ culvert m 0 X5 Pump House. Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Sum 1	ME15		No.	5		
per array.Item1GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.Item1MISCELLANEOUS WORKSMISCELLANEOUS WORKSNo.1X1Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.No.1X2Straight or curved to a radius exceeding 12 mm70X375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m0X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House. Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1		Alarm System				
for the pump protection as instructed by the Engineer.MISCELLANEOUS WORKSPump Protection System Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.No.X1Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -mX2Straight or curved to a radius exceeding 12 mmX375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.mX4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1	ME16		Item	1		
X1Pump Protection System Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.No.Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -m70X2Straight or curved to a radius exceeding 12 mm70X375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m²220X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1	ME17		Item	1		
X1Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.No.1Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -m70X2Straight or curved to a radius exceeding 12 mm70X375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m0X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1		MISCELLANEOUS WORKS				
X1Diagonal pipe sleeve pump anti-vandal protection including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/004.No.1Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -m70X2Straight or curved to a radius exceeding 12 mm70X375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m0X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1		Pump Protection System				
Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the following alignment: -mX2Straight or curved to a radius exceeding 12 mmX375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m²X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House No.OIS/NUC/PH/001.Sum1	X1		No.	1		
following alignment: -m70X2Straight or curved to a radius exceeding 12 mm70X375mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.m²220X4450mm diameter reinforced concrete pipe/ culvertm0X5Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.Sum1		Kerbs				
X3 75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet. m² 220 X4 450mm diameter reinforced concrete pipe/ culvert m 0 X5 Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Sum 1 Fences Fences Image: Construct a c						
Solar Array laid onto a guage 500 polythene sheet. m 0 X4 450mm diameter reinforced concrete pipe/ culvert m 0 X5 Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Sum 1 Fences Fences Image: Construct a for the superficial area Pump House to detail as per Drawing Sum 1	X2	Straight or curved to a radius exceeding 12 m	m	70		
X5 Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001. Fences	X3		M²	220		
X5 Construct a 12.0m superficial area Pump House to detail as per Drawing Sum 1 No.OIS/NUC/PH/001. Fences Image: Construct a 12.0m superficial area Pump House to detail as per Drawing Sum 1	X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
No.OIS/NUC/PH/001.		Pump House				
	X5		Sum	1		
X6a Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of m 80		Fences				
barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection	m	80		

ltem No.	Description			Amount (UGx.)
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120	
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2	
	Training of Operator's staff			
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1	
	Operation and Maintenance Manuals			
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1	
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	ltem	Rate Only	
	Total Carried to Collection			
BILL N Item	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			Amount
No.	Description			(UGx.)
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
	Page 5			
	Total Bill No. 1 Carried to Bill Summary		·I	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
1	<u>General Site Clearance</u> General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	ansing materials.				
2	<u>PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, not in trenches;	m	Rate Only		
2.2	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
. .	trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	1,055		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to				
Г 4	PN 10, and of the following sizes	Na	4		
5.1	DN75mm	No.	4		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
6.1	following main pipe sizes DN75mm PN10	No.	1		
6.2	DN40mm PN10	No.	Rate Only		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
	OD90 female adapter	No.	2	1	

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks				//_
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN65mm	No.	Rate Only		
8.2	DN75mm	No.	Rate Only		
•	Westerde				
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
9.2	DN65mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Danth nationanding 1 Fra	Na	Rate Only		
10.1	Depth not exceeding 1.5m	No.	Tate Only		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
	Depth not exceeding 1.5m	No.	1		
10.2	Depti not exceeding 1.5m				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	14		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	25		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	15		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	3		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	34		
	Total Carried to Collection				

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT BILL No. 2 · TRANSMISSION MAINS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	ltem	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
	pipe sizes, pressure ratings and supply of a pair of replacement screen				
4.1	<u>element and seal ring :-</u> DN75mm, PN10	No.	1		
4.1		NO.	I		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
0	sizes, pressure ratings and supply of a pair of replacement disk element				
	and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

	o. 3 : STORAGE RESERVOIR WORKS			1	Amount
ltem No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection			<u> </u>	
	o. 3 : STORAGE RESERVOIR WORKS			1	
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				
	Total Bill No. 3 Carried to Bill Summary		·		

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	365		
2.2	OD75mm PN6	m	Rate Only		
2.3	OD90mm PN6	m	380		
2.3	OD110mm <u>uPVC</u> PN6	m	865		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	1		
3.2	OD90mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
3.4	OD63mm	No.	1		
	Unequal tees				
3.5	OD90 x 63mm	No.	3		
3.6	OD75 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD110mm	No.	Rate Only		
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
5	End caps				. ,
5.1	OD63mm	No.	14		
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD75mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
7.1	DN65mm	No.	2		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	14		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection				

SCHEME ID. 2.4: MUKUJU IN TORORO DISTRICT BILL No. 4 · DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 12				
	Page 13				
	Total Bill No. 4 Carried to Bill Summar	у			

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL SUMMARY

Bill No.	Description		Amount (UGx.)
	WORK ITEMS		
1	Abstraction Works		
2	Transmission Mains		
3	Storage Reservoir Works	N/A	
4	Distribution Network		
	Total Carried to Grand Summary		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 1 : ABSTRACTION WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m³	4		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m²	0		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		
	Total Carried to Collection				

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m³	5		
6.3	200mm thick base and heel slabs.	m³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m³	19		
6.5	200mm thick sump wall.	m³	41		
6.6	200mm thick top slab.	m³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and / or filleting of all exposed concrete corners.	m²	5		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including charmfering and / or filleting of all exposed concrete corners.	m²	145		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Carried to Collection				

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 1 : ABSTRACTION WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	MISCELLANEOUS METAL WORK				<u> </u>
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
10.3	Valve Surface Boxes Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
X2	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X3	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection				
BILL N	Io. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline	ltem	135		
	route, including felling trees, grabbing tree stumps and disposal of arising materials.				
2	<u> PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN125mm, in trenches; depth not exceeding 1.5m.	m	3		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1 3.2	OD125mm HDPE PN16 OD140mm HDPE PN10	m m	Rate Only Rate Only		
4	<u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with</u> integral rubber ring socket joints laid in trenches to depths not				
4.1	OD140 to PN 16	m	2,836		
	PIPEWORK - FITTINGS AND VALVES				
5	<u>Cast or Spun Iron Pipe Fittings</u> Bends				
- 4	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN125mm Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m	No.	4		
5.2	<u>Viking Johnson stepped couplings as Maxistep</u> DN100 x 63	No.	Rate Only		
5.3	DN100 x 75	No.	Rate Only		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Viking Johnson Flanged adaptors as Aquafast to PN16				
5.4	DN75	No.	1		
5.5	DN100	No.	1		
5.6	DN125	No.	10		
	Cast or Spun Iron Pipe Fittings				
6	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
6.1	DN125mm	No.	2		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
6.2	DN125 x 50mm	No.	1		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the following				
	main pipe sizes				
7.1	DN125mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	DN125mm	No.	2		
	Total Carried to Collection		I		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.1	DN125mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
10.2	Depth not exceeding 1.5m	No.	2		
11	Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	2		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11.2	Not exceeding DN300mm	m	Rate Only		
12	Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
12.2	<u>Pipe surrounds, of imported granular material, for the following pipe</u> Not exceeding DN200mm	m	200		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 2 · TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	90		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	102		
	Total Carried to Collection				
	IO. 2 : TRANSMISSION MAINS				A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-					<u> </u>
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill Summary				

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	360		
2.2	OD75mm PN6	m	122		
2.3	OD90mm PN6	m	432		
2.4	OD110mm PN6	m	95		
2.5	OD140mm PN6	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD50mm	No.	Rate Only		
3.2	OD63mm	No.	Rate Only		
3.3	OD75mm	No.	Rate Only		
3.4	OD90mm	No.	Rate Only		
3.5	OD110mm	No.	Rate Only		
	Unequal tees				
3.6	OD75 x 63mm	No.	1		
3.7	OD90 x 63mm	No.	8		
3.8	OD110 x 63mm	No.	2		
3.9	OD110 x 75mm	No.	3		
	Total Carried to Collection	•	1		

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	End caps				
4.1	OD63mm	No.	14		
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
	10, and of the following sizes				
5.1	DN50mm	No.	Rate Only		
5.2	DN65mm	No.	Rate Only		
5.3	DN75mm	No.	Rate Only		
5.4	DN100mm	No.	Rate Only		
5.5	DN125mm	No.	Rate Only		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
6.3	DN100 x 100	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.4	DN100	No.	Rate Only		
6.5	DN125	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	1		
7.2	DN150mm	No.	Rate Only		
	Total Carried to Collection				

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT BILL No. 4 · DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;		-		
7.3	DN125 x 50mm	No.	Rate Only		
7.4	DN125 x 65mm	No.	Rate Only		
7.5	DN125 x 75mm	No.	Rate Only		
7.6	DN125 x 100mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD90 x 63mm	No.	1		
8.2	OD110 x 63mm	No.	1		
	Valves and Penstocks				
9	Air Valve				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD90mm	No.	Rate Only		
9.2	OD110mm	No.	Rate Only		
9.3	OD125mm	No.	Rate Only		
9.4	OD140mm	No.	Rate Only		
10	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
10.1	DN75mm	No.	Rate Only		
10.2	DN100mm	No.	Rate Only		
	DN125mm	No.	Rate Only		
	DN140mm	No.	Rate Only		
	Total Carried to Collection			<u> </u>	

SCHEME ID. 2.5: NANKUSI IN MBALE DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connecor pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
11.1	DN50mm	No.	13		
	Other Pipework Ancillaries Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	No.	36		
	<u>Reinstatement</u> Roads				
13	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	m	Rate Only		
10					
	Total Carried to Collection Io. 4 : DISTRIBUTION NETWORK				
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 10				
	Page 11				
	Page 12				
	Page 13				
			1		

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated or the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m³	296		
2.3	Ditto but in soft / decomposed rock soils	m ³	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	90		
2.5	Ditto but in marshy soils	m ³	65		
2.6	Ditto but in soft / decomposed rock soils	m ³	45		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufacturer's specifications	m²	Rate Only		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 40m ² at Intake Site and 800m ² at Pump Station.	m²	850		
	Total Carried to Collection		•	·	

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary Portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15, of the following thickness	m ³	1.1		
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe and Heel				
6.2	200mm thick toe.	m ³	0.3		
		2			
6.3	200mm thick base slab.	m³	2.4		
6.4	350/ 200mm thick retaining wall/ weir stem.	m ³	0		
6.5	200mm thick sump walls.	m ³	13.5		
6.6	200mm thick top slab.	m ³	1.2		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including chamfering and / or filleting of all exposed concrete corners.	m²	4.0		
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly sloping formwork to walls including chamfering and / or filleting of all exposed concrete corners.	m²	140		
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m²	11		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	1.2		
	Total Carried to Collection		1	<u> </u>	

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
3.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	Rate Only		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	Rate Only		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10,				
	cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	Rate Only		
	End Caps				
9.4	DN250mm flanged end cap.	No.	Rate Only		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 m long, and of				
	the following sizes:-				
9.5	150 mm ND	No.	Rate Only		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high, Stainless steel.	No.	1		
	MISCELLANEOUS METAL WORK				
	Ladders				
10.1	External galvanized mild steel ladder to BS 4211, galvanized to BS 729, complete and as shown in the drawings including fixing to precast concrete	m	8		
	units				

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ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Access Manhole Cover				. /
10.2	600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	2		
	Pump Protection System				
10.3	Vertical pipe pump stilling tube/ anti-vandal protection sleeve structure to detail as per Drawing No. OIS/NUC/SD/010, including 1.5x1.5x0.3m support base.	No.	0		
	Valve Surface Boxes				
10.4	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	Rate Only		
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	4.0kW Submersible Pump Set with 5.5kW Pumping Inverter with Data Module, rated flow Q = 15 m ³ /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 19.35kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	135 1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
	Total Carried to Collection		<u> </u>	<u> </u>	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1E10a	6mm ² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
/E11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	60		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	M²	120		
X4	450mm diameter reinforced concrete pipe/ culvert	m	2		
	Total Carried to Collection			<u> </u>	

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	80		
X6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
Х7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
Х9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
ILL N	Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7		1		

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	ltem	1		
2	<u>PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
8.1	OD75mm HDPE PN10	m	Rate Only		
4	<u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral</u> rubber ring socket joints laid in trenches				
.1	<u>OD110 to PN 10</u> Depth not exceeding 1.5m	m	353		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN 10, and of the following sizes				
5.1	DN65mm	No.	4		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc. and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7 7.1	Equal Adapters OD75 female adapter	No.	2		

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
8	Valves and Penstocks Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
8.1	DN65mm	No.	Rate Only		
8.2	DN75mm	No.	1		
9	Washouts				
	Washout as specified in the drawings, complete with plastic compression				
	pipe fittings ; tee, drainage pipes, union ball valve, flap valve, stone				
	masonry outfall structure and all other fittings necessary to make the				
	complete installation on pipes of the following sizes; all to PN10 including				
	valve surface box to detail.				
9.1	DN100mm	No.	Rate Only		
9.2	DN75mm	No.	1		
9.3	DN65mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and of				
	the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	1		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
	the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection		1		

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No.2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following				
	<u>pipe sizes</u>				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe sizes				
12.2	Not exceeding DN200mm	m	25		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	6		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1- 0.2 m ³ , for the following pipe sizes				
13	Diameter not exceeding DN200mm	No.	Rate Only		
	Other Pipework Ancillaries				
14	<i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts.	No	4		
14	Total Carried to Collection	No.	4		
BILL N	Io. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance including trees, stumps and disposal of arising materials.	ltem	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN100mm, PN10	No.	1		
5	150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
5.1	DN100mm, PN10	No.	1		
6 6.1	Landscaping and Walkways Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
	Total Carried to Collection		l		

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		(0000)
7 7.1	Fences Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
.2	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary Portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
3.1	Grade C15	m³	2		
	Total Carried to Collection				
em	Io. 3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Bill No. 3 Collection				(UGx.)
	Page 11				
	Page 12				

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No.4 : DISTRIBUTION NETWORK

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	DEMOLITION AND SITE CLEARANCE				(
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	ltem	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	278		
2.2	OD75mm PN6	m	102		
2.2	OD90mm PN6		1102		
2.3 2.4	OD110mm PN6	m m	295		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD110mm	No.	Rate Only		
3.2	OD90mm	No.	1		
	Unequal tees				
3.3	OD90 x 75mm	No.	2		
3.4	OD90 x 63mm	No.	5		
3.5	OD75 x 63mm	No.	5		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD110mm	No.	Rate Only		
4.2	OD90mm	No.	Rate Only		
4.3	OD75mm	No.	Rate Only		
4.4	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD110mm	No.	Rate Only		
5.2	OD90mm	No.	Rate Only		
5.3	OD75mm	No.	Rate Only		
5.4	OD63mm	No.	13		
5.5	OD50mm	No.	Rate Only		
	Total Carried to Collection	1	<u> </u>	<u> </u>	

SCHEME ID. 2.6: BUWEREBE IN MANAFWA DISTRICT BILL No.4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
6.1	OD110mm	No.	Rate Only		
6.2	OD90mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic compression				
	pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all				
	other fittings necessary to make the complete installation on pipes of the				
	following sizes; all to PN10 including valve surface box and stone				
	masonry outfall structure to detail as per Drawing No. OIS/NUC/SD/004.				
7.1	DN100mm	No.	Rate Only		
7.2	DN75mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN100mm	No.	Rate Only		
8.2	DN75mm	No.	Rate Only		
8.3	DN65mm	No.	Rate Only		
8.4	DN50mm	No.	13		
	Other Pipework Ancillaries				
9	<i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts.	No.	34		
	Total Carried to Collection				
BILL N	lo. 4 : DISTRIBUTION NETWORK				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 14				
	Page 15				
	Total Bill No. 4 Carried to Bill Summary		<u> </u>		

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT BILL SUMMARY

 WORK ITEMS Abstraction and Electromechanical Works Transmission Mains Storage Reservoir Works Distribution Network 	
 2 Transmission Mains 3 Storage Reservoir Works 	
3 Storage Reservoir Works	
4 Distribution Network	
Total Carried to Grand Summary	

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

1	General Site Clearance			Rate (UGx.)	(UGx.)
	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
	Marshy soils	m ³	42		
2.5	Soft / decomposed rock soils	m³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				· · ·
4	Turfing for lawns inside fenced off compound; including filling with	m ²	40		
	excavated topsoil and preparation of surfaces.				
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on				
	concrete base slab (MS) ; complete with water tight jointing and finishing works				
_	to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
	the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
13	MISCELLANEOUS WORK Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	$3.0 ext{ x } 1.5 ext{ top x bottom width x } 1.5 ext{m}$ deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME1	ELECTRO-MECHANICAL WORKS Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered) 7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump	No.	1		
ME2	End. 2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	125		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Total Carried to Collection				

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	ltem	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	135		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Total Carried to Collection				

					Amount
em No.	Description				(UGx.)
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
ХХ	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
BILL No	. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			*	
em No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
2	<u>PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	660		
4	<u>uPVC Pipes</u> <u>uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral</u> rubber ring socket joints laid in trenches				
4.1	<u>OD110 to PN 10</u> Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
5 5.4	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN75mm	No.	4		
	Total Carried to Collection		L	<u> </u>	

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
6.3	DN65mm PN10	No.	Rate Only		
6.4	DN50mm PN10	No.	Rate Only		
6.5	DN40mm PN10	No.	Rate Only		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
	to ISO 2441, complete with isolating gate valve to ISO 7259, flange				
	adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN75mm	No.	1		
-	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN75mm	No.	1		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	1		
	Total Carried to Collection			<u> </u>	

10.2 [[[t	Valve Surface Boxes Valve Surface box for DN100 - DN300 valves, with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes Not exceeding DN300mm	No.	1	(UGx.)
10.2 [[] [] [] [] [] [] [] [] [] [] [] [] []	securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to the following depths Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes	No.	1	
10.2 [[] [] [] [] [] [] [] [] [] [] [] [] []	down pipe, complete as specified and to the following depths Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes	No.	1	
10.2 [[[[[[]]]]	Depth not exceeding 1.5m Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes	No.	1	
<u> </u> 	Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes	No.	1	
<u>I</u> <u>t</u> 11 r	Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes			
<u>E</u> <u>t</u>	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes			
11 1	the following pipe sizes			
11 1	the following pipe sizes			
	Not avagading DN300mm			
		m	48	
_	Surrounds			
	Pipe surrounds, of selected excavated granular material, for the			
<u>†</u>	following pipe sizes			
12.1	Not exceeding DN200mm	m	72	
	Pipe surrounds, of imported granular material, for the following pipe			
<u>+</u>				
12.2	Not exceeding DN200mm	m	150	
F	Pipe surrounds, of mass concrete, for the following pipe sizes			
12.3	Not exceeding DN200mm	m	100	
13 <u>(</u>	Concrete Stools and Thrust Blocks			
	Thrust Blocks			
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume			
<u>(</u>	0.1-0.2 m ³ , for the following pipe sizes			
13.1 [Diameter not exceeding DN200mm	No.	4	
	Other Pipework Ancillaries			
I	Marker Posts			
14 I	Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection	nr	28	

BILL No. 2 : TRANSMISSION MAINS em No. Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Bill No. 2 Collection				
Page 6				
Page 7				
Page 8				
Total Bill No. 2 Carried to Bill				

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	ltem	1		
	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
	DN75mm, PN10	No.	1		
	Total Carried to Collection				

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				x
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS				
	12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
	<u>grades.</u>				
8.1	Grade C15	m³	2		
	Total Carried to Collection				
BILL No	. 3 : STORAGE RESERVOIR WORKS				A a
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 10				
	Page 11				

1 2	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials. PIPEWORK-PIPES Pleasing Processory Place Distribution	ltem	1	(UGx.)
	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1	
	route, including felling trees, grabing tree stumps and disposal of arising materials. <u>PIPEWORK-PIPES</u>	ltem	1	
2			1	
2	Plastia Pressure Bines, Distribution			
	Plastic Pressure Pipes- Distribution			
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m			
2.1	OD63mm PN10	m	1,364	
2.2	OD90mm PN10	m	384	
	PIPEWORK - FITTINGS AND VALVES			
	PN10 HDPE Compression fitting to DIN 8074/BS 5114			
	Plastic Pipe Fittings			
3	Equal tees			
3.1	OD63mm	No.	6	
	Unequal tees			
3.2	OD90 x 63mm	No.	6	
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings			
4	<u>Couplers</u>			
4.1	OD90 x 63mm	No.	6	
5	End caps			
5.1	OD110mm	No.	Rate Only	
5.2	OD90mm	No.	Rate Only	
5.3	OD75mm	No.	Rate Only	
5.4	OD63mm	No.	7	
5.5	OD50mm	No.	Rate Only	
	Total Carried to Collection			

SCHEME ID. 3.1: OBAJAI IN KABERAMAIDO DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges				
6.1	OD63mm	No.	4		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
7.1	DN50mm	No.	6		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
8.4	DN50mm	No.	7		
	Other Pipework Ancillaries				
	Marker Posts				
8.4	Marker posts for pipes, gate valves, air valves, washouts	nr	62		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for				
9	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection		I		
BILL No	. 4 : DISTRIBUTION NETWORK				
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 12				
	Page 13				
	Total Bill No. 4 Carried to Bill Summary		1		

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	60		
2.5	Soft / decomposed rock soils	m ³	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				. ,
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size ; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts				
	on concrete base slab (MS) ; complete with water tight jointing and finishing				
_	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
	the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all				
	to PN 6				
	200 mm ND	No.	1		
	Total Carried to Collection			<u> </u>	

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	$3.0 ext{ x } 1.5 ext{ top x bottom width x } 1.5 ext{m}$ deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 22 m^3 /hr., rated head H = 75m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	ltem	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	240		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	135		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Total Carried to Collection				

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
/IE13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
VIE14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the				
	<u>following alignment: -</u>				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	50		
	Total Carried to Collection		1	<u> </u>	

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
K6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
Х7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
ILL I tem	No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				Amount
No.	Description				(UGx.)
-	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary		•		

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	1,240		
4	uPVC Pipes				
•	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10				
4.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN40mm	No.	Rate Only		
5.2	DN50mm	No.	Rate Only		
5.3	DN65mm	No.	Rate Only		
5.4	DN75mm	No.	Rate Only		
5.5	DN100mm	No.	Rate Only		
6	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
0.2					

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
	DN40mm	No.	Rate Only		
	DN50mm	No.	Rate Only		
	DN65mm	No.	Rate Only		
	DN75mm	No.	1		
5.5	DN100mm	No.	Rate Only		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN100mm	No.	Rate Only		
9.2	DN75mm	No.	1		
9.3	DN65mm	No.	Rate Only		
9.4	DN50mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	1		
-					

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
NO.	Reinstatement				(00.)
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	<u>Surrounds</u> Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
10.1					
12.1	Not exceeding DN200mm	m	55		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	120		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	180		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection	nr	20		
BILL N	Io. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No. 4.3 : STORAGE RESERVOIR WORKS

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
-	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising	Item	1		
	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the following height and reservior capacities.				
.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
		No.	4		
.1	10m ³	INO.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
•	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
.1	DN75mm, PN10	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
•	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
.1	[OPTIONAL]	No	Rate Only		
	DN100mm, PN10 DN75mm, PN10	No. No.	1		
.2 .3	DN65mm, PN10	No.	Rate Only		
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with	m ²	150		
	excavated topsoil and preparation of surfaces.	1(1	100		

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT
BILL No. 3 : STORAGE RESERVOIR WORKS

6.2			Qty.	Rate (UGx.)	(UGx.)
	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection Io. 3 : STORAGE RESERVOIR WORKS		•		
Item No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No.4 : DISTRIBUTION NETWORK

	IE ID. 3.2: AJULON IN KABERAMAIDO DISTRICT 10.4 : DISTRIBUTION NETWORK	-			
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				X 1
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	PIPEWORK-PIPES Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5rr				
2.1	OD63mm PN10	m	325		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN10	m	806		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	Rate Only		
	Unequal tees				
3.5	OD90 x 75mm	No.	Rate Only		
3.6	OD90 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
5.3	OD63mm	No.	3		
	Total Carried to Collection				

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT | BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
6.3	OD63mm	No.	Rate Only		
7	Washouts				
-	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
7.2	DN75mm	No.	Rate Only		
7.1	DN65mm	No.	Rate Only		
7.2	DN50mm	No.	Rate Only		
•					
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap				
	complete with connector pipes and locakable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN65mm	No.	Rate Only		
8.2	DN50mm	No.	5		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	40		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		

SCHEME ID. 3.2: AJULON IN KABERAMAIDO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

em Description Io.		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
General Site Clearance				
General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
Earthworks				
Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
Marshy soils	m ³	52		
Soft / decomposed rock soils	m³	26		
Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
Marshy soils	m ³	4		
Soft / decomposed rock soils	m³	1		
Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings				
	m ³	16		
Soft / decomposed rock soils	m ³	8		
Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of	m ³	10		
top/ vegetable soil.	111	10		
	General Site Clearance General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils Soft / decomposed rock soils Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils Soft / decomposed rock soils Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils Soft / decomposed rock soils Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils Soft / decomposed rock soils Filling to precast concrete sump structure by methods specified and to depths: as shown in the drawings with the following materials Selected excavated material including topping with a 200mm thick layer of	General Site Clearance Item General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Item Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Eathworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ Marshy soils m ³ Soft / decomposed rock soils m ³ Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils m ³ Soft / decomposed rock soils m ³ Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. Marshy soils m ³ Soft / decomposed rock soils m	General Site Clearance Item General Site Clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Item 1 Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Item 1 Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 52 Marshy soils m ³ 26 Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 4 Marshy soils m ³ 1 1 Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 1 Marshy soils m ³ 1 1 <td>General Site Clearance Item 1 General site clearance, felling trees, grabing tree stamps and stripping of togsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Item 1 Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Item 1 Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m³ 52 Marshy soils m³ 26 m³ 26 Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material. to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m³ 4 Marshy soils m³ 1 4 Soft / decomposed rock soils m³ 1 Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m³ 1 Mars</td>	General Site Clearance Item 1 General site clearance, felling trees, grabing tree stamps and stripping of togsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Item 1 Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer. Item 1 Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 52 Marshy soils m ³ 26 m ³ 26 Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material. to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 4 Marshy soils m ³ 1 4 Soft / decomposed rock soils m ³ 1 Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings. m ³ 1 Mars

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland cement to BS 12, aggregate to BS 882 , maximum aggregate size ; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump Supply and install 100mm thick precast reinforced concrete vertical culverts				
	on concrete base slab (MS); complete with water tight jointing and finishing				
	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the concrete, all to PN6 and of the following sizes and lengths, including supply of				
	the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND Total Carried to Collection	No.	2		
ILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			Į	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		

SCHEN	IE ID. 3.3: TOTOLIM IN KUMI DISTRICT			
12	<i>Gate Valves: Hand Operated</i> DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes			
	MISCELLANEOUS WORK			
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8	
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1	
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1	
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only	
16	Stone pitched Channel. 3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5	
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only	
	Total Carried to Collection			

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 75m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

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		ζΔ(ΞΠΟΝ ΔΝ	I) FI FC II	ROMECHANICAL	WORKS

	IE ID. 3.3: TOTOLIM IN KUMI DISTRICT I0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special</u> erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection		-	-	
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
2	PIPEWORKS - PIPES Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1 2.2	DN75mm, not in trenches; DN75mm, in trenches; depths not exceeding 1.5m	m m	Rate Only 12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	630		
	PIPEWORK - FITTINGS AND VALVES <u>Cast or Spun Iron Pipe Fittings</u> Bends				
4.1 4.2	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN75mm DN100mm	No. No.	4 Rate Only		
	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
5.1	DN75mm PN10	No.	1		

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
6	Equal Adapters OD90 female adapter	No.	2		
0		140.	2		
	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
7	DN75mm	No.	Rate Only		
	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9	DN75mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
9.1	Depth not exceeding 1.5m	No.	Rate Only		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
9.2	Depth not exceeding 1.5m	No.	Rate Only		
	Total Carried to Collection		<u> </u>	<u> </u>	

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
11.1	Not exceeding DN200mm	m	Rate Only		
	Ding surrounds, of imported grapular material, for the following pine				
	Pipe surrounds, of imported granular material, for the following pipe				
11.2	Not exceeding DN200mm	m	60		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
11.3	Not exceeding DN200mm	m	80		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
12	Diameter not exceeding DN200mm	No.	Rate Only		
12		NO.	Tato only		
	Other Pipework Ancillaries Marker Posts				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	26		
	Total Carried to Collection	<u> </u>	<u> </u>	<u> </u>	
	IO. 2 : TRANSMISSION MAINS	1			۸
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 8		1		

SCHEN	IE ID. 3.3: TOTOLIM IN KUMI DISTRICT Page 9		
	Page 10		
	Total Bill No. 2 Carried to Bill Summary		

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT BILL No. 4.3 : STORAGE RESERVOIR WORKS

Item	Io. 4.3 : STORAGE RESERVOIR WORKS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				//
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising	Item	1		
	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded				
	Polyethylene Water Storage Tank to DUS 1560: 2013 as				
	manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved				
	complete with a lockable access man ways, inlet/ riser, ball float valve,				
	overflow with insect screen, float type water level indicator and outlet/				
	down pipe with a strainer, washout and overflow connection, including				
	interconnecting pipe work and fittings, as detailed in the drawings,				
	supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
-	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT BILL No. 3 - STORAGE RESERVOIR WORKS

6 Landscaping and Walkways 6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. m² 150 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. No. Rate Only 7 Fences m 60 60 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 7.2 Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m³ 2 8.1 Grade C15 m³ 2 Item Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS	ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. m ² 150 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. No. Rate Only 7 Fences m 60 60 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m ³ 2 8.1 Grade C15 m ³ 2 Total Carried to Collection Unit Qty. Bill No. 3 Collection Page 12		Landscaping and Walkways				(00.)
method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. nethod" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. 7 Fences 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 7.2 Gates No. 1 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m³ 2 8.1 Grade C15 m³ 2 1 Total Carried to Collection No. 1 Bill No. 3 Collection Page 12		Turfing for lawns inside fenced off compound; including filling with	m²	150		
7.1 Galvamised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 172 aggregate to BS882 , for 10mm aggregate sizes and the following grades: m³ 2 8.1 Grade C15 m³ 2 Total Carried to Collection WILL No. 3 : STORAGE RESERVOIR WORKS Item No. Unit Qty. Rate (UGx.) Amou (UGx) Page 12 Bill No. 3 Collection I I I	6.2	method" between the gate, pump house and solar array in one raw,	No.	Rate Only		
7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete 8.1 Grade C15 Image: Concrete Ordinary Designed to Collection Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete 8.1 Grade C15 Image: Concrete Ordinary Designed to Collection Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete 8.1 Grade C15 Image: Concrete Ordinary Designed to Collection Image: Concrete Ordinary Designed Mix Concrete Image: Concrete Ordinary Designed Mix Concrete SILL No. 3 : STORAGE RESERVOIR WORKS Image: Concrete Ordinary Description Image: Concrete Ordinary Description Image: Concrete Ordinary Description Image: Concrete Ordinary Description No. Bill No. 3 Collection Image: Concrete Ordinary Description Image: Concrete Ordinary Description Image: Concrete Ordinary Descri		Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw	m	60		
8 Designed Mix Concrete Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Image: Concrete is a co	7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match	No.	1		
BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m³ 2 8.1 Grade C15 m³ 2 Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amou (UGx) Bill No. 3 Collection Page 12 I						
Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amou (UGx) Bill No. 3 Collection Page 12 Image 12 Image 12 Image 12 Image 12	8	BS 12, aggregate to BS882, for 10mm aggregate sizes and the				
BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amou (UGx Bill No. 3 Collection Page 12 Image	8.1	Grade C15	m ³	2		
Item No. Description Unit Qty. Rate (UGx.) Amou (UGx) Bill No. 3 Collection Page 12 Image 12 Image 12 Image 12 Image 12		Total Carried to Collection				
No. Unit Qty. Rate (UGx.) Bill No. 3 Collection Page 12	BILL N	lo. 3 : STORAGE RESERVOIR WORKS				
Page 12		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
		Bill No. 3 Collection				
Page 13		Page 12				
		Page 13				
Total Bill No. 3 Carried to Bill Summary						

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
2.1	trench to the following depths not exceeding 1.5m OD63mm PN6	m	80		
2.1	OD90mm PN6	m m	180		
2.2			100		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	Rate Only		
	Unequal tees				
3.2	OD90 x 75mm	No.	Rate Only		
3.3	OD90 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.2	OD90mm	No.	Rate Only		
5	End caps				
5.1	OD63mm	No.	3		
	Total Carried to Collection	<u> </u>	<u>I</u>	1	

SCHEME ID. 3.3: TOTOLIM IN KUMI DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make				
	the installation on pipes of the following sizes, all to PN10, include				
	chamber as specified.				
6.1	OD90mm	No.	Rate Only		
6.2	OD75mm	No.	Rate Only		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN75mm	No.	Rate Only		
7.2	DN65mm	No.	Rate Only		
8	Farm Gate Connections				
-	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	3		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	12		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection		•		
tem	Io. 4 : DISTRIBUTION NETWORK				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 4 Collection				
	Page 14				
	raye 14				

CIVIL WORKS FOR OFF- FARM IRRIG SCHEME ID. 3.3: TOTOLIM IN KUMI E		ILITIES: LOT 3 EA	STERN PRO	VINCE AREA
		1	I	I I
	Page 15			
Tota	Bill No. 4 Carried to Bill Summary			

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles or site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
.1	Marshy soils	m ³	52		
 2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	46		
2.5	Soft / decomposed rock soils	m³	14		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix , concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
5.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts or				
	concrete base slab (MS) ; complete with water tight jointing and finishing				
	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
	the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				
	Total Carried to Collection			<u> </u>	

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	$3.0 \ x \ 1.5$ top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection			<u> </u>	

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	ltem	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	ltem	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
	Total Carried to Collection				

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				<u>/</u> /
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
/IE14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	ltem	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<i>Kerbs</i> <u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the</u> <u>following alignment: -</u>		135		
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		

BILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			
ltem No.	Description			Amount (UGx.)
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	50	
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10	
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2	
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1	
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1	
ХХ	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only	
	Total Carried to Collection			
	0. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1	American
Item No.	Description			Amount (UGx.)
	Bill No. 1 Collection			
	Page 2			
	Page 3			
	Page 4			
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	Page 7	-		
	Total Bill No. 1 Carried to Bill Summary			

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
			10		
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD75mm HDPE PN10	m	185		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches				
	OD110 to PN 10				
1.1	Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
.1	DN65mm	No.	4		
6	Bulk Flow Meters				
Ŭ	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as_				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
5.1	DN65mm PN10	No.	1		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
7	Equal Adapters				
7.1	OD75 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
8.1	DN65mm	No.	Rate Only		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN65mm	No.	Rate Only		
9.2	DN50mm	No.	Rate Only		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
0.1	Depth not exceeding 1.5m	No.	1		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
0.2	Depth not exceeding 1.5m	No.	Rate Only		
	Total Carried to Collection				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	12		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe_				
	Not exceeding DN200mm	m	30		
12.2			00		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	6		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	2		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	13		
	Total Carried to Collection				
	Bill No. 2 Collection				
	Dece 9				
	Page 8				
	Page 8				
	Page 10				

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No. 4.3 : STORAGE RESERVOIR WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	ltem	1		
2	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 6.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	<u>150-200 micron union/ compresion type clear uPVC Y- Screen Filter,</u> non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN100mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
	Gates				
7.2	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS		-		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

BILL No.4 : DISTRIBUTION NETWORK	
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tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of	Item	1		
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	208		
2.2	OD90mm PN6	m	610		
	<u>OD110 to PN 6</u>				
2.3	Depth not exceeding 1.5m	m	1,670		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
	Unequal tees				
3.3	OD90 x 75mm	No.	2		
3.4	OD90 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers_				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	9		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD110mm	No.	3		
6.2	OD90mm	No.	2		
6.3	OD63mm	No.	2		
7	Washouts				
-	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN100mm	No.	2		
7.2	DN75mm	No.	3		
7.4	DN50mm	No.	4		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	9		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	108		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		
	Total Carried to Collection			<u> </u>	

SCHEME ID. 3.4: KAGOLOGOLO IN SERERE DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

BILL N Item No.	Io. 4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 13				
	Page 14				
	Total Bill No. 4 Carried to Bill	Summary			

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BII I	SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles or site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	64		
2.5	Soft / decomposed rock soils	m ³	16		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
3	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of top	m ³	10		
5	vegetable soil.	m	10		
	Total Carried to Collection		l	<u> </u>	

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	Item	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	ltem	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts or				
	concrete base slab (MS) ; complete with water tight jointing and finishing				
	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
•	the pipe and as shown in the drawings.	NL.	0		
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

BILL No.1 : ABSTRACTION AND FLECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin and Pump Sump.	m	8		· · ·
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all				
	to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated	NO.			
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	$3.0 ext{ x } 1.5$ top x bottom width x $1.5 ext{m}$ deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				X/
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	5.5kW Submersible Pump Set with 7.5kW Pumping Inverter with Data Module, rated flow Q = 15m³/hr., rated head H = 85m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	1x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 1x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5 ME6	PV Protect 1000-15, SPD x 1 on incoming solar PV. Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	No. Item	1 1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0012D.	No.	1		
ME9	6mm ² Borehole drop cable,	m	5		
ME10	6mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		

BILL No.1 : ABSTRACTION AND ELECTROMECHANIC

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				, <i>i</i>
ME13	Earthing at solar array and borehole installation by 16mn ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	135		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Total Carried to Collection				

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BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WO	RKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House_				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	<u>Fences</u> Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection Io. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				
-	IO. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORKS - PIPES				

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT

	IE ID. 3.5: KITUKILU IN BUGWERI DISTRICT	r	ı ı	1
2	Steel Pipes			
	Galvanized iron pipes (Class B) with threaded joints, include			
	unions/sockets, all to ISO 2531 of the following sizes;			
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12	
3	HDPE Pipes			
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in			
	trenches to depths not exceeding 1.5m			
3.1	OD160mm HDPE PN10	m	Rate Only	
4	uPVC Pipes			
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with			
	integral rubber ring socket joints laid in trenches			
	OD160 to PN 10			
4.1	Depth not exceeding 1.5m	m	1,240	
	PIPEWORK - FITTINGS AND VALVES			
	Cast or Spun Iron Pipe Fittings			
5	Bends			
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all			
	to PN 10, and of the following sizes			
5.1	DN160mm	No.	4	
6	Bulk Flow Meters			
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,			
	valves, etc and all other fittings to make the installation complete, as			
	specified, all fittings to PN10 including a masonry chamber, and on the			
	following main pipe sizes			
6.1	DN15mm PN10	No.	1	
	Total Carried to Collection		•	
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SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				\$ <i>1</i>
7	Equal Adapters				
7.1	OD90 female adapter	No.	2		
8	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
	as specified.				
8.1	DN150mm	No.	2		
9	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
9.1	DN150mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
10.1	Depth not exceeding 1.5m	No.	2		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover_				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
10.2	Depth not exceeding 1.5m	No.	2		
	Total Carried to Collection		1	<u> </u>	

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No. 2 · TRANSMISSION MAINS

No. Description Un No. Reinstatement Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes m 11 Not exceeding DN300mm m Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes m 12.1 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 13.0 Concrete Stools and Thrust Blocks m 14 Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes n 13.1 Diameter not exceeding DN200mm Nc 0ther Pipework Ancillaries Marker Posts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr No. Description Un Bill No. 2 Collection Page 6 Page 7 Page 7 Page 7	it Qty.	Rate (UGx.)	Amount
Roads Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes m 11 Not exceeding DN300mm m Surrounds Pipe surrounds, of selected excavated granular material, for the following pipe sizes m 12.1 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 14 Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Not 13.1 Diameter not exceeding DN200mm Not 14 Marker Posts m 15.1 Diameter not exceeding DN200mm Not 16.1 Diameter not exceeding DN200mm Not 17.1 Diameter not exceeding DN200mm Not 18.1 Diameter not exceeding DN200mm Not 19.1 Diameter not exceeding DN200mm Not 19.1 Diameter not exceeding DN200mm Not 19.1 Diameter not exceeding DN200mm Not 19.1<			(UGx.)
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following pipe sizes m 12.1 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 13 Concrete Stools and Thrust Blocks m 14 Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes 13.1 Diameter not exceeding DN200mm Nc 0.1-0.2 m³, for the following pipe sizes n 13.1 Diameter not exceeding DN200mm Nc 0.1-0.2 m³, for the following pipe sizes n 13.1 Diameter not exceeding DN200mm Nc 0ther Pipework Ancillaries m Marker Posts n 14 Marker posts for pipes, gate valves, air valves, washouts nr No. Description Un Bill No. 2 Collection Page 6			
12.1 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.2 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 13 Concrete Stools and Thrust Blocks m 14 Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Not 13.1 Diameter not exceeding DN200mm Not 14 Marker Posts n 15.1 Diameter not exceeding DN200mm Not 16.1 Diameter not exceeding DN200mm Not 17.1 Diameter not exceeding DN200mm Not 18.1 No. 2 Collection nr 19.1 Total Carried to Collection In 11.1 No. 2 Collection Page 6 Page 6			
Pipe surrounds, of imported granular material, for the following pipe. m 12.2 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks. m 13 Concrete Stools and Thrust Blocks m 13 Concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes Not 13.1 Diameter not exceeding DN200mm Not 13.1 Other Pipework Ancillaries Marker Posts nr Marker Posts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection ILL No. 2 : TRANSMISSION MAINS Un Bill No. 2 Collection Page 6			
12.2 Not exceeding DN200mm m Pipe surrounds, of mass concrete, for the following pipe sizes m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 13 Concrete Stools and Thrust Blocks m 13 Concrete Grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes n 13.1 Diameter not exceeding DN200mm Nc 0ther Pipework Ancillaries Marker Posts n 14 Marker Posts n 14 No. 2 : TRANSMISSION MAINS un Bill No. 2 Collection Page 6 Page 6	150		
Pipe surrounds, of mass concrete, for the following pipe sizes m 12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 13 Concrete Stools and Thrust Blocks m 14 Mass concrete grade C15 thrust blocks for pipes and fittings, volume Nc 0.1-0.2 m³, for the following pipe sizes Nc 13.1 Diameter not exceeding DN200mm Nc 0ther Pipework Ancillaries Marker Posts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection Bill No. 2 : TRANSMISSION MAINS Image 6			
12.3 Not exceeding DN200mm m 13 Concrete Stools and Thrust Blocks m 13 Concrete Stools and Thrust Blocks m 13 Thrust Blocks m 13 Mass concrete grade C15 thrust blocks for pipes and fittings, volume n 0.1-0.2 m³, for the following pipe sizes n 13.1 Diameter not exceeding DN200mm Nc 0ther Pipework Ancillaries nr Marker Posts n 14 Marker Posts nr BILL No. 2 : TRANSMISSION MAINS Un Bill No. 2 Collection Page 6	180		
13 Concrete Stools and Thrust Blocks 13 Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes 13.1 Diameter not exceeding DN200mm 13.1 Diameter not exceeding DN200mm 14 Marker Posts 14 Marker Posts 15 Total Carried to Collection BILL No. 2 : TRANSMISSION MAINS Item No. Description Un Bill No. 2 Collection Page 6			
Thrust Blocks Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m³, for the following pipe sizes 13.1 Diameter not exceeding DN200mm No 14 Marker Posts nr Total Carried to Collection Bill No. 2 Collection Page 6 Page 6	160		
Mass concrete grade C15 thrust blocks for pipes and fittings, volume No 13.1 Diameter not exceeding DN200mm No 13.1 Other Pipework Ancillaries No 14 Marker Posts nr 15.1 Total Carried to Collection Intervention 14 Description Un Bill No. 2 Collection Page 6			
13.1 0.1-0.2 m³, for the following pipe sizes Diameter not exceeding DN200mm No 13.1 0ther Pipework Ancillaries Marker Posts No 14 Marker posts for pipes, gate valves, air valves, washouts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr SILL No. 2 : TRANSMISSION MAINS Image 100 mm Un Bill No. 2 Collection Page 6			
13.1 Diameter not exceeding DN200mm No Other Pipework Ancillaries Marker Posts Marker Posts 14 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection SILL No. 2 : TRANSMISSION MAINS Item No. Description Un Bill No. 2 Collection Page 6			
Other Pipework Ancillaries Marker Posts Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection SILL No. 2 : TRANSMISSION MAINS Item No. Description Bill No. 2 Collection Page 6			
Marker Posts nr 14 Marker Posts nr 14 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection SILL No. 2 : TRANSMISSION MAINS Item No. Description Un Bill No. 2 Collection Page 6	o. 8		
14 Marker posts for pipes, gate valves, air valves, washouts nr Total Carried to Collection SILL No. 2 : TRANSMISSION MAINS tem No. Description Un Bill No. 2 Collection Page 6			
Total Carried to Collection ILL No. 2 : TRANSMISSION MAINS tem No. Description Un Bill No. 2 Collection Page 6			
ILL No. 2 : TRANSMISSION MAINS tem No. Description Bill No. 2 Collection Page 6	46		
tem Description Un Bill No. 2 Collection Page 6			
No. Description On Bill No. 2 Collection Page 6			
Page 6	it Qty.	Rate (UGx.)	Amount (UGx.)
Page 6			
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Page 7			
Page 8 Total Bill No. 2 Carried to Bill Summary			

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No. 4.3 : STORAGE RESERVOIR WORKS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	ltem	1		
	Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, acess ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc, painting and finishes; complete as specified and detailed in the drawings, of the following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
Ð	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
	DN75mm, PN10	No.	1		

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

No. Description Unit Qty. Rate (UGx.) (UGx.) 6 Landscaping and Walkways m ² 150 (UGx.) 6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. m ² 150 Rate (UGx.) (UGx.) 6.2 500 x 500 x 50m precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. No. Rate Only Rate Only 7 Fences m 60 60 60 60 7.1 Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. M 60 1 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete. No. 1 1 1 8 Designed mix concrete. to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m³ 2 1 8.1 Grade C15 m³ 2 1 1 Total Carried to Collection B		o. 3 : STORAGE RESERVOIR WORKS			1	
6.1 Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces. m ² 150 6.2 500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill. No. Rate Only 7 Fences m 60 7.1 Galvarnised wire Gauge 10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m ³ 2 8.1 Grade C15 m ³ 2 Entrume Total Carried to Collection Bill No. 3 Collection Bill No. 3 Collection Page 9	ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
excavated topsoil and preparation of surfaces. Image: Construct and the second sec			0			
Image: Constraint of the second of the se	6.1		m²	150		
7.1 Galvamised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 1 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 1 7.2 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 1 8 Designed mix concrete. to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m ³ 2 8.1 Grade C15 m ³ 2 1 Total Carried to Collection Bill No. 3 Collection No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Page 9	6.2	method" between the gate, pump house and solar array in one raw,	No.	Rate Only		
7.1 Galvamised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. m 60 1 7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 1 7.2 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 1 8 Designed mix concrete. to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m ³ 2 8.1 Grade C15 m ³ 2 1 Total Carried to Collection Bill No. 3 Collection No. Description Unit Qty. Rate (UGx.) Amount (UGx.) Page 9	7	Fences				
7.2 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. No. 1 1 Provision and Placing of Concrete Ordinary Designed Mix Concrete No. 1 1 1 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: 1 1 1 8.1 Grade C15 m ³ 2 1 EllLL No. 3 : STORAGE RESERVOIR WORKS Item No. Unit Qty. Rate (UGx.) Amoun (UGx.) Page 9 Sill No. 3 Collection I I I I		Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of	m	60		
the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete 8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Image: Concrete 8.1 Grade C15 m ³ 2 Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Bill No. 3 Collection Image 9 Image 9						
Ordinary Designed Mix Concrete Image: Concrete in the concrete i	7.2		No.	1		
8 Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: Image 2 Image 2 8.1 Grade C15 m ³ 2 Image 2 Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Bill No. 3 Collection Image 9 Image 9 Image 9 Image 9						
BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades: m3 L		ordinary Designed Mix Concrete				
8.1 Grade C15 m ³ 2 Total Carried to Collection BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amoun (UGx.) Bill No. 3 Collection Page 9 I I I I I	8					
Item No. Item Sill No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Page 9		following grades:				
BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amoun (UGx.) Bill No. 3 Collection Page 9 Image	8.1	Grade C15	m ³	2		
BILL No. 3 : STORAGE RESERVOIR WORKS Item No. Description Unit Qty. Rate (UGx.) Amoun (UGx.) Bill No. 3 Collection Page 9 Image		Total Carried to Collection				
No. Unit Qty. Rate (UGx.) Bill No. 3 Collection Page 9	BILL N					
Page 9		Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
		Bill No. 3 Collection				
Page 10		Page 9				
		Page 10				
Total Bill No. 3 Carried to Bill Summary		Total Bill No. 2 Carried to Bill Summary				

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	345		
2.2	OD75mm PN6	m	485		
2.3	OD90mm PN6	m	1,120		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD63mm	No.	1		
	Unequal tees				
3.2	OD90 x 75mm	No.	1		
3.3	OD90 x 63mm	No.	1		
3.4	OD75 x 63mm	No.	1		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Reducing Couplers/ Unions				
4.1	OD90 x 63mm	No.	Rate Only		
4.2	OD75 x 63mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps	_			
5.1	OD63mm	No.	12		
	Total Carried to Collection				

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT BILL No.4 : DISTRIBUTION NETWORK

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	Air Vaves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
5.1	OD75mm	No.	2		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN75mm	No.	3		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
3.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	68		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		

SCHEME ID. 3.5: KITUKILO IN BUGWERI DISTRICT
BILL No. 4 : DISTRIBUTION NETWORK

em No. Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill	Summary			

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism silt basin and reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 4.0m including forming earth bands around the reservoir banks with the excavated material as per the drawings to fair profiles to receive grassing and/ or disposing the excavated material on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	1555		
2.2	Soft / decomposed rock soils	m ³	30		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 3.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	150		
2.5	Soft / decomposed rock soils	m ³	6		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
	as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
	Total Carried to Collection				

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT BILL SUMMARY

BILL SUMMARY BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS						
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
4	Landscaping Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	2725			
	ELECTRO-MECHANICAL WORKS					
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)					
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 15 m ³ /hr., rated head H = 150m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump Fnd	No.	1			
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	ltem	1			
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1			
ME4	PV Disconnect 1000-40-2	No.	1			
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1			
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	ltem	1			
ME7	PV Combiner	No.	1			
ME7a	Pressure Switch and Gauge - P6/12	No.	1			
ME8	Sinewave filter - SWAP0022D.	No.	1			
ME9	10mm ² Borehole drop cable,	m	5			
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	100			
ME10a	6mm ² UV Single Cable.	m	60			
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2			
ME11a	Adapter box	No.	1			
	Total Carried to Collection		<u> </u>			

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS							
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1				
	Earthing and Lightening Protection						
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1				
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1				
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5				
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1				
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1				
	MISCELLANEOUS WORKS						
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1				
	Kerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -						
X2	Straight or curved to a radius exceeding 12 m	m	70				
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220				
X4	450mm diameter reinforced concrete pipe/ culvert	m	Rate Only				
	Total Carried to Collection						

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, including special erection methods in "marshy grounds" to the Engineer's approval.	m	80		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
X7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	ltem	Rate Only		
XXX	Stone Pitching. 250mm minimum thick grouted stone masonry jointed in cement : sand (1:4) motar as detailed in the drawing.	m²	125		
	Total Carried to Collection Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary		1		

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL N	BILL No. 2 : TRANSMISSION MAINS							
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)			
	DEMOLITION AND SITE CLEARANCE							
	General Site Clearance							
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1					
	route, including felling trees, grabing tree stumps and disposal of							
	arising materials.							
2	<u>PIPEWORKS - PIPES</u> Steel Pipes							
2	Steer Pipes							
	Galvanized iron pipes (Class B) with threaded joints, include							
	unions/sockets, all to ISO 2531 of the following sizes;							
2.1	DN50mm, in trenches; depths not exceeding 1.5m	m	12					
	(1995 D)							
3	HDPE Pipes							
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m							
	trenches to depths not exceeding 1.5m		135					
3.1	OD63mm HDPE PN10	m	346					
0.1			010					
	PIPEWORK - FITTINGS AND VALVES							
	Cast or Spun Iron Pipe Fittings							
4	Bends							
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all							
	to PN 10, and of the following sizes	NI-	Rate Only					
4.1 4.2	DN40mm DN50mm	No. No.	4					
4.2	DNJOHIH	INO.	4					
5	Bulk Flow Meters							
•	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,							
	valves, etc and all other fittings to make the installation complete, as							
	specified, all fittings to PN10 including a masonry chamber, and on the							
	following main pipe sizes							
5.1	DN50mm PN10	No.	1					
	PN16 HDPE Compression fitting to DIN 8074/BS 5114							
6	Equal Adapters							
6.1	OD63 female adapter	No.	2					
	Total Carried to Collection							
-	IO. 2 : TRANSMISSION MAINS				Amount			
Item No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)			
110.					(00.)			
7	Valves and Penstocks							
	<u>Air Valves</u>							
•		•	•	. 1				

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT BILL SUMMARY

DILL V	SUMMARY					
	Flanged CI double orifice air relief valve, DN50mm, as specified					
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,					
	flange adaptors, distance pieces, and all fittings necessary to make the					
	installation on pipes of the following sizes, all to PN10, include chamber					
	as specified.					
7.1	DN50mm	No.	Rate Only			
8	Washouts					
	Washout as specified in the drawings, complete with plastic					
	compression pipe fittings; tee, drainage pipes, union ball valve, flap					
	valve, stone masonry outfall structure and all other fittings necessary to					
	make the complete installation on pipes of the following sizes; all to					
	PN10 including valve surface box to detail.					
8.1	DN50mm	No.	Rate Only			
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES					
	Other Chambers					
	Masonry air valve chamber, complete as specified in the drawings, and					
	of the following depths					
9.1	Depth not exceeding 1.5m	No.	Rate Only			
5.1	Depth not exceeding 1.5m	140.	i lato o ing			
	Valve Surface Boxes					
	Valve surface box for DN100 - DN300 valves, with lockable cover					
	securely attached to main body of surface box by chain or bolt, include					
	down pipe, complete as specified and to the following depths					
9.2	Depth not exceeding 1.5m	No.	Rate Only			
	Reinstatement					
	Roads					
	Breaking up, temporary and permanent reinstatement of gravel roads					
40	for the following pipe sizes		Data Only			
10	Not exceeding DN300mm	m	Rate Only			
	Total Carried to Collection					

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

ltem	No. 2 : TRANSMISSION MAINS Description	Unit	Qty.	Rate (UGx.)	Amount
No.		onit	Qty.		(UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the following pipe sizes				
11.1	Not exceeding DN200mm	m	15		
			-		
	Pipe surrounds, of imported granular material, for the following pipe				
11.2	Not exceeding DN200mm	m	20		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
11.3	Not exceeding DN200mm	m	40		
12	Concrete Stools and Thrust Blocks				
	Thread Disales				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume 0.1-0.2 m ³ , for the following pipe sizes				
12.1	Diameter not exceeding DN200mm	No.	1		
12.1		INU.	I		
	Other Pipework Ancillaries				
	Marker Posts				
13	Marker posts for pipes, gate valves, air valves, washouts	nr	20		
	Total Carried to Collection Io. 2 : TRANSMISSION MAINS				
Item			_		Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	raye r				
	Page 8				
	Total Bill No. 2 Carried to Bill Summary				

BILL SUMMARY BILL No. 2 : TRANSMISSION MAINS

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL	Io. 4.3 : STORAGE RESERVOIR WORKS	T		1	
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir <u>Erect a welded steel tower for reservoir support complete, include</u> <u>foundations, columns, beams, acess ladders, plates, braces, walkway/</u> <u>guardrail, base plates, anchor bolts, nuts, washers, etc, painting and</u> <u>finishes; complete as specified and detailed in the drawings, of the</u> <u>following height and reservior capacities.</u>				
2.1	Height; 3.0m for (4No. x 10m ³ Tanks)	No.	1		
3	<u>Plastic Tanks</u> Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4 4.1	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
	Total Carried to Collection				

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT BILL SUMMARY

BILL N	Io. 3 : STORAGE RESERVOIR WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m ²	150		
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7	Fences				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
	Io. 3 : STORAGE RESERVOIR WORKS		1		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				
	Total Bill No. 3 Carried to Bill Summary				

SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL N Item	Io.4 : DISTRIBUTION NETWORK			<u>г</u>	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN6	m	82		
2.2	OD75mm PN6	m	Rate Only		
2.3	OD90mm PN6	m	100		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	Rate Only		
3.2	OD75mm	No.	Rate Only		
3.3	OD63mm	No.	Rate Only		
	Unequal tees				
3.4	OD90 x 75mm	No.	Rate Only		
3.5	OD90 x 63mm	No.	2		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	2		
	Total Carried to Collection			i	

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SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT BILL SUMMARY

BILL No.4 : DISTRIBUTION NETWORK						
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)	
6	Valves and Penstocks					
	Air Vaves					
	Flanged CI double orifice air relief valve, DN50mm, as specified					
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,					
	flange adaptors, distance pieces, and all fittings necessary to make the					
	installation on pipes of the following sizes, all to PN10, include chamber					
	as specified.					
6.1	OD90mm	No.	Rate Only			
6.2	OD75mm	No.	Rate Only			
6.3	OD63mm	No.	Rate Only			
7	Washouts					
	Washout as specified in the drawings, complete with plastic					
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,					
	flap valve and all other fittings necessary to make the complete					
	installation on pipes of the following sizes; all to PN10 including valve					
	surface box and stone masonry outfall structure to detail as per					
7.1	DN75mm	No.	Rate Only			
7.2	DN65mm	No.	Rate Only			
7.3	DN50mm	No.	Rate Only			
8	Farm Gate Connections					
-	Make DN50mm Irrigation Water Supply Hydrant connection to the					
	distribution main, inclusive of PVC compressive ball valve and end					
	cap complete with connector pipes and locakable chamber as detailed					
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all					
	to PN10: -					
8.1	DN50mm	No.	2			
	Other Pipework Ancillaries					
	Marker Posts					
9	Marker posts for pipes, gate valves, air valves, washouts	nr	5			
5			Ŭ			
	Reinstatement					
	Roads					
	Breaking up, temporary and permanent reinstatement of gravel roads					
	for the following pipe sizes					
10	Not exceeding DN300mm	m	Rate Only			
	Total Carried to Collection					

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SCHEME No. 3.6: LUWANULA IN MAYUGE DISTRICT

BILL SUMMARY BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	o. 4 : DISTRIBUTION NETWORK Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bill Summary			·	

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles or site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	48		
2.5	Soft / decomposed rock soils	m ³	12		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling				
	Structures				
	Filling to precast concrete sump structure by methods specified and to depths				
3	as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of top, vegetable soil.	m³	10		
	Landscaping				
4	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	40		
	Total Carried to Collection		1	<u> </u>	

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.	ltem	1		
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover (MS).	ltem	1		
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts or concrete base slab (MS) ; complete with water tight jointing and finishing works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
•	the pipe and as shown in the drawings.	N	0		
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				
	Total Carried to Collection		1	<u> </u>	

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	3.0×1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

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SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

BILL N	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m^3 /hr., rated head H = 55m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Aarray in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval		1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10 ME10a	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding. 6mm ² UV Single Cable.	m m	175 60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	ltem	1		
	Total Carried to Collection				

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
ME16	Alarm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	ltem	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	ltem	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No.OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	<i>Kerbs</i> <u>Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the</u> <u>following alignment: -</u>		135		
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				(00))
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	50		
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
X8	<u>Training of Operator's staff</u> Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
X9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	ltem	Rate Only		
	Total Carried to Collection				
ILL N	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
tem No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	ltem	1		
2	<u> PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
<u>2</u> .1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	<u>HDPE Pipes</u> HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	506		
	PIPEWORK - FITTINGS AND VALVES				
4 I.1	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN 10, and of the following sizes DN75mm	No.	4		
5	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
ö.1	<u>following main pipe sizes</u> DN75mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
6 5.1	Equal Adapters OD75 female adapter	No.	2		
	Total Carried to Collection				

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No. 2 : TRANSMISSION MAINS

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	Valves and Penstocks <u>Air Valves</u> Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
7.1	DN75mm	No.	2		
8	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall structure and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box to detail.				
8.1	DN75mm <u>PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES</u> Other Chambers	No.	3		
	Masonry air valve chamber, complete as specified in the drawings, and of the following depths				
9.1	Depth not exceeding 1.5m	No.	2		
	Valve Surface Boxes <u>Valve surface box for DN100 - DN300 valves</u> , with lockable cover <u>securely attached to main body of surface box by chain or bolt, include</u> <u>down pipe</u> , complete as specified and to the following depths				
9.2	Depth not exceeding 1.5m	No.	1		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	24		

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
11.1	Not exceeding DN200mm	m	Rate Only		
	Pipe surrounds, of imported granular material, for the following pipe				
11.2	Not exceeding DN200mm	m	70		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
11.3	Not exceeding DN200mm	m	12		
12	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
12.1	Diameter not exceeding DN200mm	No.	4		
	Other Pipework Ancillaries				
13	<i>Marker Posts</i> Marker posts for pipes, gate valves, air valves, washouts	nr	40		
10					
	Total Carried to Collection				
tem	IO. 2 : TRANSMISSION MAINS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	1	1	1		

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				(00.)
	General Site Clearance				
	General site slearance including trees, stumps and disposal of arising	Item	1		
1	materials.	nom	•		
2	Reservoir				
-	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
-	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
8.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
1.1	element and seal ring :- DN75mm, PN10	No.	1		
		NO.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
6	Landscaping and Walkways				
6.1	Turfing for lawns inside fenced off compound; including filling with	m²	150		
	excavated topsoil and preparation of surfaces.				
	Total Carried to Collection				
	Io. 3 : STORAGE RESERVOIR WORKS			Г Г	Amount
em Io.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone	No.	Rate Only		
	method" between the gate, pump house and solar array in one raw,				
	laid onto and including 200mm thick murram fill.				
7	Fences				

SCHEN	IE ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT				
7.1	Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of	m	60		
	barbed wire on top; height 2-2.5m.				
	Catao				
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match	No.	1		
1.2	the fence.	NO.	I		
	Provision and Placing of Concrete				
	Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to				
	BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
	Tonowing grades.				
8.1	Grade C15	m ³	2		
	Total Carried to Collection				
BILL N	o. 3 : STORAGE RESERVOIR WORKS				America
	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Description	Unit	QLy.		(UGx.)
No.		Unit	Qty.		(UGx.)
No.	Bill No. 3 Collection	Unit	uty.		(UGx.)
No.			uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11	Unit	uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11	Unit	uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11	Unit	uty.		(UGx.)
No.	Bill No. 3 Collection Page 11	Unit	uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)
No.	Bill No. 3 Collection Page 11		uty.		(UGx.)

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	400		
2.3	OD90mm PN10	m	110		
2.5	OD110mm uPVC PN10 PIPEWORK - FITTINGS AND VALVES	m	728		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
	Unequal tees				
3.2	OD90 x 75mm	No.	Rate Only		
3.3	OD90 x 63mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	1		
5	End caps				
5.1	OD75mm	No.	Rate Only		
5.2	OD63mm	No.	8		

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks				
	<u>Air Vaves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
6.1	OD90mm	No.	1		
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN50mm	No.	2		
7.2	DN40mm	No.	Rate Only		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	22		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
10	Not exceeding DN300mm	m	48		
	Total Carried to Collection				

SCHEME ID. 4.1: NAMUNKANAGA IN IGANGA DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

No. Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Total Bill No. 4 Carried to Bil	I Summary			

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form trapezoidal prism reservoir in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	520		
2.2	Ditto but in marshy soils	m ³	296		
2.3	Ditto but in soft / decomposed rock soils	m ³	136		
2.4	Excavation to form trapezoidal drain in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.	m ³	345		
2.5	Ditto but in marshy soils	m ³	255		
2.6	Ditto but in soft / decomposed rock soils	m ³	165		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m³	Rate Only		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	Rate Only		
4	Single layer of geotextile laid to manufacturer's specifications	m²	Rate Only		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces; 240n ² at Intake Site and 800m ² at Pump Station.	m²	1,050		

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	7.5kW Submersible Pump Set with 11.0kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 55m total head; set to not more than $\underline{5m}$ below ground including Dry- run protection, Motor and Pump End.	No.	1		
ME2	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	ltem	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array in Item 2 above as per drawings, including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	ltem	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P5/8	No.	1		
ME8	Sinewave filter - SWAP0017D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	200		
/IE10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	ltem	1		

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

Earthing and Lightening Protection Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a nanhole with pure copper electrodes and all accessories to attain an earth esistance of less than 1 ohm ightning Protection at solar array and borehole installation consisting of 5x3mm copper tape, air terminal, test block and earth electrode in a manhole nd all accessories. OW Solar security light and battery complete with 6m steel pole and lockable attery box Narm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors er array.	Sum Sum No.	1		
hanhole with pure copper electrodes and all accessories to attain an earth esistance of less than 1 ohm ightning Protection at solar array and borehole installation consisting of 5x3mm copper tape, air terminal, test block and earth electrode in a manhole nd all accessories. 0W Solar security light and battery complete with 6m steel pole and lockable attery box Narm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors	Sum No.	1		
5x3mm copper tape, air terminal, test block and earth electrode in a manhole nd all accessories. 0W Solar security light and battery complete with 6m steel pole and lockable attery box Narm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors	No.			
attery box Narm System GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors		5		
GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors				
	Item	1		
GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor or the pump protection as instructed by the Engineer.	ltem	1		
NISCELLANEOUS WORKS				
Pump Protection System /ertical pipe pump stilling tube/ anti-vandal protection sleeve including a oating suction assembly structure to detail as per Drawing No.OIS/ABS/002a r OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
Cerbs Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the ollowing alignment: -				
straight or curved to a radius exceeding 12 m	m	70		
5mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
50mm diameter reinforced concrete pipe/ culvert	m	Rate Only		
	OIS/ABS/003, including 1.5x1.5x0.3m support base. erbs re-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the llowing alignment: - traight or curved to a radius exceeding 12 m form thick of 12 - 25mm size machine crushed aggregate cover under the blar Array laid onto a gauge 500 polythene sheet. 50mm diameter reinforced concrete pipe/ culvert	OIS/ABS/003, including 1.5x1.5x0.3m support base. erbs re-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the llowing alignment: - traight or curved to a radius exceeding 12 m form thick of 12 - 25mm size machine crushed aggregate cover under the plar Array laid onto a gauge 500 polythene sheet.	POIS/ABS/003, including 1.5x1.5x0.3m support base. erbs re-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the llowing alignment: - traight or curved to a radius exceeding 12 m traight or curved to a radius exceeding 12 m form thick of 12 - 25mm size machine crushed aggregate cover under the olar Array laid onto a gauge 500 polythene sheet. 50mm diameter reinforced concrete pipe/ culvert m Rate Only	OIS/ABS/003, including 1.5x1.5x0.3m support base. erbs re-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m² to the llowing alignment: - traight or curved to a radius exceeding 12 m form thick of 12 - 25mm size machine crushed aggregate cover under the olar Array laid onto a gauge 500 polythene sheet. 50mm diameter reinforced concrete pipe/ culvert m Rate Only

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special erection</u> <u>methods in "marshy grounds"</u> to the Engineer's approval.	m	80		
X6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	120		
	Gates				
X7	Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		1		
ltem No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	Item	1		
2	<u>PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
.1	Galvanised steel pipes with threaded joints, include unions/sockets, all to ISO 2531 and to PN10, laid in trench of the following sizes and	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
.1	OD75mm HDPE PN10	m	1,010		
	PIPEWORK - FITTINGS AND VALVES				
4	<u>Cast or Spun Iron Pipe Fittings</u> <i>Bends</i> Galvanized iron threaded socket 45° bends, EN 10242:1995, all to PN		135		
.1	<u>10, and of the following sizes</u> DN100mm	No.	4		
5	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc. and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the				
.1	following main pipe sizes DN100mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
6	Equal Adapters				
5.1	OD75female adapter	No.	2		

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
'.1	DN65mm	No.	3		
8	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings ; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
.1	DN75mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
9.1	Depth not exceeding 1.5m	No.	3		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
.1	Depth not exceeding 1.5m	No.	4		
	Reinstatement				
10	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
0.1	Not exceeding DN300mm	m	36		
11	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
1.1	Not exceeding DN200mm	m	80		
	Total Carried to Collection			<u> </u>	

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				
1.2	Not exceeding DN200mm	m	350		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
11.3	Not exceeding DN200mm	m	60		
12	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
12.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
40	Marker Posts	N	10		
13	Marker posts for pipes, gate valves, air valves, washouts. Total Carried to Collection	No.	40	<u> </u>	
ILL N	lo. 2 : TRANSMISSION MAINS			ļ	
tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION. BILL No. 3 : STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance including trees, stumps and disposal of arising	Item	1		
•	materials.				
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, access ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc., painting and				
	finishes; complete as specified and detailed in the drawings , of the				
	following height and reservoir capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms.				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications				
	and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compression type clear uPVC Y- Screen Filter,				
4	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
4.2	DN65mm, PN10	No.	Rate Only		
	150-200 micron union/ compression type clear uPVC Y- Disc Filter,				
5	non corrosive, complete with all fittings, installation on the following GI				
5	pipe sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Landscaping and Walkways				
5.1	Turfing for lawns inside fenced off compound; including filling with excavated topsoil and preparation of surfaces.	m²	150		
5.2	500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary Portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
3.1	Grade C15	m ³	2		
	Total Carried to Collection Io. 3 : STORAGE RESERVOIR WORKS				
em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10.	Bill No. 3 Collection				(000.)
	Page 9				
	Page 10				
	Total Bill No.3 Carried to Bill Summary		1		

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	ltem	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
2	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	540		
2.2	OD90mm PN10		1,580		
Z		m	1,000		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	8		
3.2	OD63mm	No.	4		
		110.	т		
	Unequal tees				
3.3	OD90 x 63mm	No.	12		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
1.1	OD90mm	No.	12		
1.2	OD63mm	No.	3		
		110.	Ŭ		
5.1	End caps				
5.4	OD63mm	No.	15		
6	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
5.1	OD90mm	No.	4		
	Total Carried to Collection			· · · · · ·	

SCHEME ID. 4.2: NAMABONI IN NAMAYINGO DISTRICT REGION.

BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
7.1	DN75mm	No.	6		
7.2	DN50mm	No.	1		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connector pipes and lockable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
8.1	DN50mm	No.	15		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	72		
11 I N	Total Carried to Collection Io. 4 : DISTRIBUTION NETWORK				
tem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.		Onit	QUY.		(UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				
	Page 12				

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabbing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	66		
2.5	Soft / decomposed rock soils	m ³	17		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths				
3	as shown in the drawings with the following materials: - Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	10		
	Landscaping	0	10		
4	Turfing for lawns inside fenced off compound; including filling with	m²	40		
	excavated topsoil and preparation of surfaces. Total Carried to Collection				

ltem	Description	Unit	054	Bate (UCx)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882, maximum aggregate size; 20mm for				
	the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a				
	steel float and forming a 600 x 600mm opening for the inspection cover (MS).				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts on				
	concrete base slab (MS) ; complete with water tight jointing and finishing				
_	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply of				
8	the pipe and as shown in the drawings. 200mm ND and not exceeding 0.5m length	No.	2		
0		INU.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
11	Bellmouths Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6 200 mm ND	No.	1		
	PIPEWORK - FITTINGS AND VALVES Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
13	Ladders Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
14.1	Steel grating Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	$3.0 ext{ x } 1.5 ext{ top x bottom width x } 1.5 ext{m deep maximum trapezoidal lined drain as detailed in the drawing.}$	m	5		
17	Gabion boxes PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 - 250mm; as instructed by the Engineer	nr	Rate Only		
	Total Carried to Collection				

BILL N	0.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS		-		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	ELECTRO-MECHANICAL WORKS				
	Solar Pumping System (based on 550Wp panels; bidder to adjust numbers to match rating of panel offered)				
ME1	11.0kW Submersible Pump Set with 15kW Pumping Inverter with Data Module, rated flow Q = 20 m ³ /hr., rated head H = 100m total head; set to not more than <u>5m</u> below ground including Dry- run protection, Motor and Pump End.	No.	1		
	2x17No. x 550Wp panels solar array to provide 18.7kW power to the pump system complete including wiring.	Item	1		
ME3	Mild steel welded structure for holding solar PV panels at 15° tilt angle and suitable for a 2x17No. x 550Wp panels Solar Array in Item 2 above as per drawings including foundations, vandal proofing mounting to the Engineer's approval	Sum	1		
ME4	PV Disconnect 1000-40-2	No.	1		
ME5	PV Protect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
ME6	Surge Protection Devices - SPDs for all; Pressure Sensors, Low Water Level etc.	Item	1		
ME7	PV Combiner	No.	1		
ME7a	Pressure Switch and Gauge - P6/12	No.	1		
ME8	Sinewave filter - SWAP0022D.	No.	1		
ME9	10mm ² Borehole drop cable,	m	5		
ME10	10mm ² 3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	150		
ME10a	6mm² UV Single Cable.	m	60		
ME11	Wire kit array from solar array to controller with MC4 connectors	No.	2		
ME11a	Adapter box	No.	1		
ME12	Pump mechanical control fittings as detailed on the Pump House Drawings No. OIS/PH/001 - Sheets 3 & 4 of 4.	Item	1		
ME13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
	Total Carried to Collection				

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BILL N	IO.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
ME14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
ME16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
ME17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	ltem	1		
	MISCELLANEOUS WORKS				
X1	Pump Protection System Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a gauge 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	135 Rate Only		
X5	Pump House Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
X6a	Fences Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, <u>including special</u> erection methods in "marshy grounds" to the Engineer's approval.	m	50		
X6a		m	50		

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
K6b	Galvanized wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
Х7	Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
Х9	Operation and Maintenance Manuals Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection o. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				
Item No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT BILL No. 2 : TRANSMISSION MAINS

em lo.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	Steel Pipes				
	Galvanized iron pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531 of the following sizes;				
.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
. 1	Divisinin, in denches, depuis not exceeding 1.5m	111	12		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
.1	OD75mm HDPE PN10	m	962		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
4	Bends				
	Galvanized iron threaded socket 45° bends, to BS EN 10242:1995, all				
	to PN 10, and of the following sizes				
.1	DN65mm	No.	4		
5	Bulk Flow Meters				
•	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc. and all other fittings to make the installation complete, as				
	specified, all fittings to PN10 including a masonry chamber, and on the				
	following main pipe sizes				
.1	DN65mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
6	Equal Adapters				
.1	OD90 female adapter	No.	6		

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT BILL No. 2 : TRANSMISSION MAINS

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
7	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
7.1	DN65mm	No.	2		
8	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings ; tee, drainage pipes, union ball valve, flap				
	valve, stone masonry outfall structure and all other fittings necessary to				
	make the complete installation on pipes of the following sizes; all to				
	PN10 including valve surface box to detail.				
8.1	DN65mm	No.	2		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
9.1	Depth not exceeding 1.5m	No.	2		
	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
9.2	Depth not exceeding 1.5m	No.	2		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes		40		
10	Not exceeding DN300mm	m	12		
11	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
1.1	Not exceeding DN200mm	m	260		

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Pipe surrounds, of imported granular material, for the following pipe				(com)
11.2	Not exceeding DN200mm	m	150		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
11.3	Not exceeding DN200mm	m	45		
	Concrete Stools and Thrust Blocks				
	<i>Thrust Blocks</i> <u>Mass concrete grade C15 thrust blocks for pipes and fittings, volume</u> 0.1-0.2 m ³ , for the following pipe sizes				
12	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries Marker Posts				
13	Marker posts for pipes, gate valves, air valves, washouts.	No.	32		
	Total Carried to Collection			•	
Item	Io.2 : TRANSMISSION MAINS				Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				

materials. Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities. No. 1 Height; 9.0m for (4No. x 10m ³ Tanks) No. 1 3 Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inled inster approved complete with a lockable access man ways, inled in the drawings, supply specifications and of the following capacity. No. 4 1 10m ³ No. 4 150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- 1 No. 1 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk. element and seal ring :- 1 No. 1 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk. element and seal	em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Image: Instant Control Instant Conterest Control Instant Control Instant Contro		DEMOLITION AND SITE CLEARANCE				
Imaterials. Reservoir Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities. No. 1 I Height; 9.0m for (4No. x 10m ³ Tanks) No. 1 B Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity. No. 4 1 10m ³ No. 1 150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- (OPTIONAL] No. 1 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- (OPTIONAL] No. 1 1 1 1 1 <td></td> <td>General Site Clearance</td> <td></td> <td></td> <td></td> <td></td>		General Site Clearance				
Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and fnishes; complete as specified and detailed in the drawings. of the following height and reservoir capacities. No. 1 Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene No. 1 Bastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene No. 1 Sentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity. No. 4 150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following Gl pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- No. 1 1 DN75mm, PN10 No. 1 6	1		Item	1		
Erect a welded steel tower for reservoir support complete, include foundations, columns, beams, access ladders, plates, braces, walkway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and fnishes; complete as specified and detailed in the drawings. of the following height and reservoir capacities. No. 1 Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene No. 1 Bastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene No. 1 Sentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity. No. 4 150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following Gl pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- No. 1 1 DN75mm, PN10 No. 1 6						
foundations, columns, beams, access ladders, plates, braces, waikway/ guardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings , of the following height and reservoir capacities. 1 Height, 9.0m for (4No. x 10m ³ Tanks) No. 1 3 Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man away, intel/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity. No. 4 150-200 micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- No. 1 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- No. 1 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of re	2					
quardrail, base plates, anchor bolts, nuts, washers, etc., painting and finishes; complete as specified and detailed in the drawings, of the following height and reservoir capacities. No. 1 .1 Height; 9.0m for (4No. x 10m ³ Tanks) No. 1 3 Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms. Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with in sect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity. No. 4 1 10 ⁻²⁰⁰ micron union/ compression type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :- No. 1 1 10N ⁷ 5mm, PN10 No. 1 5 pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- No. 1 1 100-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- No. 1 1 150-200 micron union/ compression type c						
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* pipe sizes, pressure ratings and supply of a pair of replacement screen No. 1 .1 DN75mm, PN10 No. 1 5 150-200 micron union/ compression type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL] No. 1 1.1 DN75mm, PN10 No. 1 6 Landscaping and Walkways No. 1 7 Turfing for lawns inside fenced off compound; including filling with m ² 150						
pipe sizes, pressure ratings and supply of a pair of replacement screen No. 1 element and seal ring :- No. 1 DN75mm, PN10 No. 1 150-200 micron union/ compression type clear uPVC Y- Disc Filter, No. 1 non corrosive, complete with all fittings, installation on the following GI No. 1 pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- No. [OPTIONAL] No. 1 DN75mm, PN10 No. 1 6 Landscaping and Walkways No. 1 .1 Turfing for lawns inside fenced off compound; including filling with m ² 150	٨					
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5 non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL] 1.1 DN75mm, PN10 6 Landscaping and Walkways .1 Turfing for lawns inside fenced off compound; including filling with	.1	DN75mm, PN10	No.	1		
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pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL] [OPTIONAL] No. 1 1 DN75mm, PN10 No. 1 6 Landscaping and Walkways	6					
element and seal ring :- [OPTIONAL] .1 DN75mm, PN10 6 Landscaping and Walkways .1 Turfing for lawns inside fenced off compound; including filling with m ²	5	pipe sizes, pressure ratings and supply of a pair of replacement disk				
[OPTIONAL] .1 DN75mm, PN10 6 Landscaping and Walkways .1 Turfing for lawns inside fenced off compound; including filling with m ²		·· · · · · · · · ·				
.1 DN75mm, PN10 No. 1 6 Landscaping and Walkways .1 Turfing for lawns inside fenced off compound; including filling with m ² 150						
.1 Turfing for lawns inside fenced off compound; including filling with m ² 150	.1		No.	1		
.1 Turfing for lawns inside fenced off compound; including filling with m ² 150	6					
	.1		m ²	150		
		excavated topsoil and preparation of surfaces.	-			

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

 500 x 500 x 50mm precast concrete paving slabs laid " Space out Stone method" between the gate, pump house and solar array in one raw, laid onto 200mm thick murram fill. Fences Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. Gates Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete Designed mix concrete, to BS 5328, with ordinary Portland cement to 		Rate Only 60 1		(UGx.)
 Galvanized wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m. <u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete 				
 Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence. Provision and Placing of Concrete Ordinary Designed Mix Concrete 	No.	1		
Ordinary Designed Mix Concrete				
Designed mix concrete, to BS 5328, with ordinary Portland cement to				
BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
1 Grade C15	m³	2		
Total Carried to Collection				
L No. 3 : STORAGE RESERVOIR WORKS				• •
Description 0.	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
Bill No. 3 Collection				
Page 9				
Page 10				

SCHEME ID. 4.3: BUYEMBA IN TORORO DISTRICT **BILL No.4 : DISTRIBUTION NETWORK**

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabbing tree stumps and disposal of arising materials.	ltem	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	1,580		
	OD90mm PN10	m m	260		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	2		
8.7	<u>Unequal tees</u> OD90 x 63mm	No.	3		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114 Plastic Pipe Fittings				
4	Couplers				
.1	OD90mm	No.	12		
5	End caps				
5.1	OD63mm	No.	8		
6	Valves and Penstocks				
	<u>Air Valves</u>				
	Flanged CI double orifice air relief valve, DN50mm, as specified				
	,flanges to ISO 2441, complete with isolating gate valve to ISO 7259,				
	flange adaptors, distance pieces, and all fittings necessary to make the				
	installation on pipes of the following sizes, all to PN10, include chamber				
	as specified.				
5.1	OD90mm	No.	2		

Item			•	B ((11 B)	Amount
No.	Description	Unit	Qty.	Rate (UGx.)	(UGx.)
7	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per Drawing				
7.1	DN75mm	No.	6		
7.2	DN50mm	No.	3		
8	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and lockable chamber as detailed on				
	Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to				
	PN10: -				
8.1	DN50mm	No.	8		
	Other Pipework Ancillaries				
	Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts.	No.	88		
BILLN	Total Carried to Collection				
ltem	Description	Unit	Qty.	Rate (UGx.)	Amount
No.		Unit	œty.		(UGx.)
	Bill No. 4 Collection				
	Page 11				
	Page 12				

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	ltem	1		
	Earthworks				
2.1	Excavation to form river/ stream diversion towards the intake / abstraction structure in normal ground, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfeces to receive hardcore fill.	m ³	35		
2.2	Ditto but for the Intake Structure	m ³	45		
2.3	Ditto but for the River Weir Structure	m ³	4		
3.1	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: - Imported rock/ hardcore fill, size 75 to 300mm hand packed or compacted by the arm of an excavator.	m ³	55		
3.2	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m³	44		
3.3	Imported murram.	m ³	18		
4	Single layer of geotextile laid to manufaturer's specifications	m ²	0		
5	Landscaping Turfing for lawns inside fenced off compound, including filling with excavated topsoil and the preparation of surfaces at Intake Site.	m²	840		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	IN-SITU CONCRETE				
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary portland				
	cement to BS 12, aggregate to BS 882 for the following structures: -				
	Grade C15/10				
	Blinding				
6.1	50mm thick blinding concrete, for base slabs, toes, key and heel; grade C15,	m³	1		
	of the following thickness				
	Grade C25/10				
	Reinforced Concrete Base Slabs, Toe, Key and Heel				
6.2	200mm thick key and toe.	m ³	5		
6.3	200mm thick base and heel slabs.	3	5		
0.5		m³	5		
6.4	500/ 200mm thick reaining wall/ weir stem.	m³	19		
6.5	200mm thick sump wall.	m³	41		
6.6	200mm thick top slab.	m³	1		
	Formwork				
	Formwork-Fair Finish				
7.1	Fair Finish Plane Horizontal				
	Plane fair finish horizontal formwork to the tops slab including charmfering and	m ²	5		
	/ or filleting of all exposed concrete corners.				
	Fair Finish Plane Vertical				
7.2	Plane fair finish vertical and / or slightly slping formwork to walls including	m ²	145		
	charmfering and / or filleting of all exposed concrete corners.				
	Finishing of top surfaces				
7.3	Steel trowel finishing of top surfaces.	m ²	20		
	Reinforcement				
	Deformed High Yield Steel				
	High yield square twisted bars to BS 4449 and of the following sizes				
8.1	Nominal size, 12mm	t	2		
	Total Carried to Collection			1	

1

BILL N	Io. 1 : ABSTRACTION WORKS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Inserts				
8.2	DN 250 CI / ST flanged, puddled pipe insert pipe inserts projecting from two faces of the concrete wall and of the following sizes, excluding supply of pipe.	No.	2		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spum Iron Pipe Fittings.				
	Flanged Reducers				
9.1	DN250 x 150mm	No.	1		
	Flange Adaptors				
9.2	DN 150mm Maxi Type or similar wide range adaptor to fit pipe spigots, flanges to BS 4505, all to PN6.	No.	1		
	Strainers				
	Flanged outlet pipe strainer, to BS 4772, flanges to BS 4504, all to PN 10, cement mortar lined, and of the following sizes: -				
9.3	DN 250 mm	No.	2		
	End Caps				
9.4	DN250mm flanged end cap.	No.	1		
	Valves and Penstocks				
	Gate Valves: Hand Operated				
	All flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 10 for				
	operation by tee key, with extension spindle not exceeding 1.5 metres long,				
	and of the following sizes:-				
9.5	150 mm ND	No.	1		
	Penstocks; hand operated including head stock and distance spindle, as				
	specified in drawings of the following size: -				
9.6	300mm wide x 1000mm high <u>Staniless Steel.</u>	No.	2		
	Total Coviad to Collection			<u> </u>	
	Total Carried to Collection				

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	MISCELLANEOUS METAL WORK				
10.1	Ladders External galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
10.2	Access Manhole Cover 600 x 600mm clear opening painted mild steel cover and frame include fixing and locking arrangement.	No.	1		
	Valve Surface Boxes				
10.3	Valve surface box with lockable cover securely attached to main body of surface box by chain or bolt, include down pipe, complete as specified and to a depth not exceeding 4.5 m.	No.	0		
	MISCELLANEOUS WORKS				
X1	450mm diameter reinforced concrete pipe/ culvert	m	2		
X2	Training of Operator's staff Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals	0			
X3	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
	Total Carried to Collection		•		
	Io. 1 : ABSTRACTION WORKS		1	1	A
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 1 Collection				(00%)
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Total Bill No. 1 Carried to Bill Summary				

tem No.	Description	Unit	135	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabbing tree stumps and disposal of				
	arising materials.				
	PIPEWORKS - PIPES				
2	<u>Steel Pipes</u>				
	Galvanised steel pipes (Class B) with threaded joints, include				
	unions/sockets, all to ISO 2531, of the following sizes.				
2.1	DN150mm, not in trenches;	m	6		
2.2	DN150mm, in trenches; depth not exceeding 1.5m.	m	6		
3	HDPE Pipes				
	HDPE pressure pipes to BS 3505, include unions/sockets, laid in				
	trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	930		
4	uPVC Pipes				
	uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with				
	integral rubber ring socket joints laid in trenches to depths not				
4.1	OD160 to PN 10	m	2,160		
	PIPEWORK - FITTINGS AND VALVES				
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
	to PN 10, and of the following sizes				
5.1	DN125mm	No.	Rate Only		
5.2	DN150mm	No.	6		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5				
	m				
	Viking Johnson stepped couplings as Maxistep				
5.3	DN150 x 100	No.	1		
	Total Carried to Collection		<u> </u>	<u> </u>	

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL No. 2 : TRANSMISSION MAINS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Viking Johnson Flanged adaptors as Aquafast to PN16				
5.4	DN150	No.	4		
	Cast or Spun Iron Pipe Fittings				
6	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the				
	following sizes;				
6.1	DN150mm	No.	3		
	Tapers				
	All flanged concentric taper to BS4772, flanges to BS4504 all to PN6,				
	cement mortar lined, and of the following sizes;				
6.2	DN150 x 50mm	No.	8		
6.3	DN150 x 65mm	No.	4		
6.4	DN150 x 75mm	No.	Rate Only		
7	Bulk Flow Meters				
	Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces,				
	valves, etc and all other fittings to make the installation complete, as				
	specified, all fittings, including a masonry chamber, and on the				
	following main pipe sizes				
7.1	DN150mm PN10	No.	1		
	PN16 HDPE Compression fitting to DIN 8074/BS 5114				
8	Equal Adapters				
8.1	OD90 female adapter	No.	Rate Only		
8.2	OD100 female adapter	No.	Rate Only		
9	Valves and Penstocks				
	Air Valves				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	DN125mm	No.	Rate Only		
9.2	DN150mm	No.	2		
	Total Carried to Collection		1	<u> </u>	

1

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
10	Washouts				
	Washout as specified in the drawings, complete with plastic compression pipe				
	fittings; tee, drainage pipes, union ball valve, flap valve, stone masonry outfall				
	structure and all other fittings necessary to make the complete installation on				
	pipes of the following sizes; all to PN10 including valve surface box to detail.				
10.1	DN125mm	No.	Rate Only		
10.2	DN150mm	No.	4		
	PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
	Other Chambers				
	Masonry air valve chamber, complete as specified in the drawings, and				
	of the following depths				
	Depth not exceeding 1.5m	No.	2		
11	Valve Surface Boxes				
	Valve surface box for DN100 - DN300 valves, with lockable cover				
	securely attached to main body of surface box by chain or bolt, include				
	down pipe, complete as specified and to the following depths				
11.1	Depth not exceeding 1.5m	No.	4		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11.2	Not exceeding DN300mm	m	12		
12	Surrounds				
12	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	80		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	420		
12.2	Total Carried to Collection	111	720	<u> </u>	

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
110.	Pipe surrounds, of mass concrete, for the following pipe sizes				(001.)
12.3	Not exceeding DN200mm	m	85		
13	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts	nr	72		
	Total Carried to Collection				
BILL N	Io. 2 : TRANSMISSION MAINS				
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 2 Collection				
	Page 6				
	Page 7				
	Page 8				
	Page 9				
	Total Bill No. 2 Carried to Bill Summar				

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

em No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
-	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
•	Dia the Taula				
3	Plastic Tanks				
	Supply and install a vertical cylindrical Rotational Moulded Polyethylene				
	Water Storage Tank to DUS 1560: 2013 as manufactured by Ms				
	Gentex Ltd. / Crest Tanks or any other approved complete with a				
	lockable access man ways, inlet/ riser, ball float valve, overflow with				
	insect screen, float type water level indicator and outlet/ down pipe with				
	a strainer, washout and overflow connection, including interconnecting				
	pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
	150-200 micron union/ compresion type clear uPVC Y- Screen Filter,				
	non corrosive, complete with all fittings, installation on the following GI				
4	pipe sizes, pressure ratings and supply of a pair of replacement screen				
	element and seal ring :-				
1.1	DN75mm, PN10	No.	1		
	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non				
5	corrosive, complete with all fittings, installation on the following GI pipe				
5	sizes, pressure ratings and supply of a pair of replacement disk				
	element and seal ring :-				
	[OPTIONAL]				
5.1	DN75mm, PN10	No.	1		
6	Landscaping and Walkways				
5.1	Turfing for lawns inside fenced off compound; including filling with	m ²	150		
	excavated topsoil and preparation of surfaces.				

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BIL No. 3 : STORAGE RESERVOIR WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6.2	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	Fences Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12 , aggregate to BS882 , for 10mm aggregate sizes and the following grades:				
8.1	Grade C15	m ³	2		
	Total Carried to Collection Io. 3 : STORAGE RESERVOIR WORKS		<u> </u>		
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount
			۵.,		(UGx.)
	Bill No. 3 Collection				(UGx.)
	Bill No. 3 Collection Page 10				(UGx.)
					(UGx.)
	Page 10				<u>(UGx.)</u>
	Page 10				<u>(UGx.)</u>
	Page 10				<u>(UGx.)</u>
	Page 10				<u>(UGx.)</u>
	Page 10				<u>(UGx.)</u>

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	<u>General Site Clearance</u>				
1	General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	350		
2.3	OD90mm PN10	m	110		
2.5	OD110mm uPVC PN10	m	728		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	<u>Equal tees</u>				
3.1	OD90mm	No.	4		
3.2	OD110mm	No.	2		
	Unequal tees				
3.3	OD110 x 63mm	No.	Rate Only		
3.4	OD110 x 75mm	No.	6		
8.5	OD110 x 90mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	End caps				
4.1	OD63mm	No.	12 Data Oaku		
4.2	OD75mm	No.	Rate Only		
4.3	OD90mm	No.	Rate Only		
1.4	OD110mm	No.	Rate Only		
	Total Carried to Collection				

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Cast or Spun Iron Pipe Fittings				
5	Bends				
	Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all to PN				
	10, and of the following sizes				
5.4	DN100mm	No.	8		
5.6	DN150mm	No.	Rate Only		
	Steel pipe fittings; flanges to PN 16; in trenches not exceeding 1.5 m				
	Viking Johnson stepped adaptors as Maxistep				
6.1	DN100 x 63	No.	Rate Only		
6.2	DN100 x 75	No.	Rate Only		
	Viking Johnson Flanged adaptors as Aquafast.				
6.5	DN50	No.	3		
6.6	DN65	No.	Rate Only		
6.7	DN75	No.	Rate Only		
6.8	DN100	No.	8		
6.9	DN125	No.	Rate Only		
	Cast or Spun Iron Pipe Fittings				
7	Junctions and Branches				
	All flanged tee to BS 4346, flanges to BS 4504 ,all to PN6 and of the following sizes;				
7.1	DN125mm	No.	Rate Only		
7.2	DN150mm	No.	Rate Only		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
8	Reducing Couplers/ Unions				
8.1	OD75 x 63mm	No.	Rate Only		
8.2	OD90 x 63mm	No.	2		
8.3	OD90 x 75mm	No.	Rate Only		
8.3	OD110 x 63mm	No.	4		

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Valves and Penstocks				
9	Air Valve				
	Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to				
	ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors,				
	distance pieces, and all fittings necessary to make the installation on pipes of				
	the following sizes, all to PN10, include chamber as specified.				
9.1	OD90mm	No.	2		
9.2	OD110mm	No.	1		
10	Washouts				
	Washout as specified in the drawings, complete with plastic				
	compression pipe fittings; tee, drainage pipes, PVC union ball valve,				
	flap valve and all other fittings necessary to make the complete				
	installation on pipes of the following sizes; all to PN10 including valve				
	surface box and stone masonry outfall structure to detail as per				
0.1	DN100mm	No.	1		
11	Farm Gate Connections				
	Make DN50mm Irrigation Water Supply Hydrant connection to the				
	distribution main, inclusive of PVC compressive ball valve and end				
	cap complete with connecor pipes and locakable chamber as detailed				
	on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all				
	to PN10: -				
1.1	DN50mm	No.	12		
	Other Pipework Ancillaries				
	Marker Posts				
12	Marker posts for pipes, gate valves, air valves, washouts	nr	30		
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
13	Not exceeding DN300mm	m	Rate Only		

SCHEME ID. 4.4: HABAYAGA IN NAMAMAYINGO DISTRICT BILL No. 4 : DISTRIBUTION NETWORK

em Description		Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 4 Collection				
	Page 12				
	Page 13				
	Page 14				

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL SUMMARY

Bill No.	Description	Amount (UGx.)
	WORK ITEMS	
1	Abstraction and Electromechanical Works	
2	Transmission Mains	
3	Storage Reservoir Works	
4	Distribution Network	
	Total Carried to Grand Summary	

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	General Site Clearance				
1	General site clearance, felling trees, grabing tree stamps and stripping of topsoil to depths not exceeding 0.25m for Water Abstraction Point/ Intake Works, Pump House and Solar Array Sites including stockpiling of topsoil for reuse and disposing off resultant materials as directed by the Engineer.	Item	1		
	Earthworks				
	Excavation to form trapezoidal prism reservior in material other than topsoil, rock or other artificial hard material, depth not exceeding 6.0m including forming earth bands along the channel of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.1	Marshy soils	m ³	52		
2.2	Soft / decomposed rock soils	m ³	26		
	Excavation to form trapezoidal channel in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.4	Marshy soils	m ³	60		
2.5	Soft / decomposed rock soils	m ³	15		
	Excavation to form cylindrical sump well in material other than topsoil, rock or other artificial hard material, depth not exceeding 5.0m including disposal and spreading of excavated material to fair profiles on site as directed by the Engineer and preparation of excavated surfaces to slopes as indicated on the drawings.				
2.6	Marshy soils	m ³	16		
2.7	Soft / decomposed rock soils	m ³	8		
	Filling Structures Filling to precast concrete sump structure by methods specified and to depths as shown in the drawings with the following materials: -				
3	Selected excavated material including topping with a 200mm thick layer of top/ vegetable soil.	m ³	10		
4	Landscaping Turfing for lawns inside fenced off compound; including filling with	m ²	40		
	excavated topsoil and preparation of surfaces.				

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

em	Description	Unit	Qty.	Rate (UGx.)	Amount
	IN-SITU CONCRETE			, ,	/11/2w \
	Provision and Placing of Concrete				
	Ordinary Design Mix Concrete				
	Designed mix, concrete to BS 8500 and BS EN 206-1, with ordinary				
	portland cement to BS 12, aggregate to BS 882, maximum aggregate size;				
	20mm for the following structures: -				
	Insitu Concrete				
5	75mm thick Grade C15 concrete blinding to pump sump base	m ³	0.25		
6.1	2200mm Diameter x 150mm thick Grade C25 concrete base slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float.				
6.2	2200mm Diameter x 150mm thick Grade C25 concrete top slab reinforced	Item	1		
	with H12 - 200 E.W (B) complete with all associated formwork, finishing with a steel float and forming a 600 x 600mm opening for the inspection cover				
	Pre-cast Concrete				
	Pump Well/ Sump				
	Supply and install 100mm thick precast reinforced concrete vertical culverts				
	on concrete base slab (MS) ; complete with water tight jointing and finishing				
_	works to approval.				
7	1200mm diameter ; height n.e 8m	Item	1		
	Concrete Inserts				
	Cast or Spum Iron Pipe Fittings.				
	Flanged, puddled and plain end pipe insert projecting from one face of the				
	concrete, all to PN6 and of the following sizes and lengths, including supply				
	of the pipe and as shown in the drawings.				
8	200mm ND and not exceeding 0.5m length	No.	2		
	Adaptors				
	Flange adaptor to fit ductile PVC to all to PN6 and of the following sizes:-				
9	200 mm ND	No.	2		
10	OD225mm PN10 plain end uPVC pipe connection between Silt Trap Basin	m	8		
	and Pump Sump.				
	Bellmouths				
11	Flanged bellmouth to ISO 2531, flanges to ISO 2441, of the following sizes all to PN 6				
	200 mm ND	No.	1		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	PIPEWORK - FITTINGS AND VALVES				· · ·
	Gate Valves: Hand Operated				
12	DN 200 mm all flanged CI gate valves to BS 5150 ,flanges to BS 4505 , all to PN 6 for operation by tee key, with extension spindle not exceeding 4.5 metres long, and of the following sizes				
	MISCELLANEOUS WORK				
	Ladders				
13	Internal galvanized mild steel ladder to BS 4211, galvernized to BS 729, complete andas shown in the drawings including fixing to precast concrete units	m	8		
	Steel grating				
14.1	Galvanized iron Coarse Trash Screen as detailed in the drawings.	No.	1		
14.2	Galvanized iron Fine Trash Screen as detailed in the drawings.	No.	1		
15	Pump Well/ Sump Supply and install 8.0m long HDPE vertical culverts on concrete base slab (MS) ; complete with a Single ND200mm flanged branch to receive a ND200 gate valve. Branch height/ positioning to be determined on site. Internal diameter ; 1200x200mm	Item	Rate Only		
	Stone pitched Channel.				
16	3.0 x 1.5 top x bottom width x 1.5m deep maximum trapezoidal lined drain as detailed in the drawing.	m	5		
	Gabion boxes				
17	PVC coated gabion boxes ; size 1m x 1m x 1m; including rockfill of size 100 -	nr	Rate Only		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ption	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
RO-MECHANICAL WORKS				()
Pumping System (based on 550Wp panels; bidder to adjust numbers h rating of panel offered)				
/ Submersible Pump Set with 15kW Pumping Inverter with Data , rated flow Q = 22 m ³ /hr., rated head H = 75m total head; set to not han <u>5m</u> below ground including Dry- run protection, Motor and Pump	No.	1		
 x 550Wp panels solar array to provide 18.7kW power to the pump complete including wiring. 	Item	1		
eel welded structure for holding solar PV panels at 15° tilt angle and	Sum	1		
connect 1000-40-2	No.	1		
tect 1000-15, SPD x 1 on incoming solar PV.	No.	1		
Protection Devices - SPDs for all; Pressure Sensors, Low Water tc.	Item	1		
nbiner	No.	1		
re Switch and Gauge - P5/8	No.	1		
ve filter - SWAP0022D.	No.	1		
Borehole drop cable,	m	5		
3-Phase Power Armoured Cable and 1-Phase Cable for grounding.	m	240		
JV Single Cable.	m	60		
array from solar array to controller with MC4 connectors	No.	2		
r box	No.	1		
nechanical control fittings as detailed on the Pump House Drawings S/PH/001 - Sheets 3 & 4 of 4.	ltem	1		
	°	s 3 & 4 of 4.	s 3 & 4 of 4.	s 3 & 4 of 4.

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Earthing and Lightening Protection				
/IE13	Earthing at solar array and borehole installation by 16mm ² PVC-I cable in a manhole with pure copper electrodes and all accessories to attain an earth resistance of less than 1 ohm	Sum	1		
1E14	Lightning Protection at solar array and borehole installation consisting of 25x3mm copper tape, air terminal, test block and earth electrode in a manhole and all accessories.	Sum	1		
ME15	60W Solar security light and battery complete with 6m steel pole and lockable battery box	No.	5		
	Alarm System				
/IE16	GMS Alarm System complete with 1No. alarm horn and 2No.vibration sensors per array.	Item	1		
VE17	GMS Alarm System complete with 1No. alarm horn and 1No.vibration sensor for the pump protection as instructed by the Engineer.	Item	1		
	MISCELLANEOUS WORKS				
	Pump Protection System				
X1	Vertical pipe pump stilling tube/ anti-vandal protection sleeve including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/002a or OIS/ABS/003, including 1.5x1.5x0.3m support base.	No.	1		
	Kerbs				
	Pre-cast concrete kerbs to BS 7263 of cross section area 0.05-0.1 m ² to the following alignment: -				
X2	Straight or curved to a radius exceeding 12 m	m	70		
X3	75mm thick of 12 - 25mm size machine crushed aggregate cover under the Solar Array laid onto a guage 500 polythene sheet.	m²	220		
X4	450mm diameter reinforced concrete pipe/ culvert	m	0		
	Pump House				
X5	Construct a 12.0m superficial area Pump House to detail as per Drawing No.OIS/NUC/PH/001.	Sum	1		
	Fences				
X6a	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Intake Site, i <u>ncluding special</u> <u>erection methods in "marshy grounds"</u> to the Engineer's approval.	m	50		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS

	Io.1 : ABSTRACTION AND ELECTROMECHANICAL WORKS			<u> </u>	A.m.a
ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
X6b	Galvarnised wire Gauge10 chain link fence to BS 1722:2019 with triple raw of barbed wire on top; height 2-2.5m at the Pumping Station Site.	m	10		
X7	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	2		
	Training of Operator's staff				
X8	Train Operator's staff in basic operation and maintenance procedures of all plant and equipment supplied as per the technical specifications and to the Project Manager's approval	Sum	1		
	Operation and Maintenance Manuals				
X9	Provide Operation and Maintenance Manuals as specified and to the Project Manager's approval	Sum	1		
XX	Horizontal pump installation option out of flanged/ sealed end HDPE culvert pipe mounted on fabricated GI support structure including a floating suction assembly structure to detail as per Drawing No. OIS/ABS/005.	Item	Rate Only		
	Total Carried to Collection				
	IO. 1 : ABSTRACTION AND ELECTROMECHANICAL WORKS				A
ltem No.	Description				Amount (UGx.)
	Bill No. 1 Collection				
	Page 2				
	Page 3				
	Page 4				
	Page 5				
	Page 6				
	Page 7				
			1		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No. 2 : TRANSMISSION MAINS

em Io.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
1	DEMOLITION AND SITE CLEARANCE General Site Clearance General site clearance 1.5m wide working corridor along the pipeline route, including felling trees, grabing tree stumps and disposal of arising materials.	Item	1		
2	<u> PIPEWORKS - PIPES</u> <u>Steel Pipes</u>				
	Galvanized iron pipes (Class B) with threaded joints, include unions/sockets, all to ISO 2531 of the following sizes;				
2.1	DN75mm, in trenches; depths not exceeding 1.5m	m	12		
3	HDPE Pipes HDPE pressure pipes to BS 3505, include unions/sockets, laid in trenches to depths not exceeding 1.5m				
3.1	OD90mm HDPE PN10	m	982		
4	<u>uPVC Pipes</u> uPVC pressure pipes to UNBS US 264: 2000 and DIN 8062 with integral rubber ring socket joints laid in trenches				
4.1	<u>OD110 to PN 10</u> Depth not exceeding 1.5m	m	Rate Only		
	PIPEWORK - FITTINGS AND VALVES				
5	Cast or Spun Iron Pipe Fittings Bends Galvanized iron threaded socket 45° bends, toBS EN 10242:1995, all				
5.1 5.2	DN40mm DN50mm	No. No.	Rate Only Rate Only		
	DN65mm	No.	Rate Only		
i.4 i.5	DN75mm DN100mm	No. No.	Rate Only Rate Only		
6	Bulk Flow Meters Bulk Flow Meter inclusive of all couplings, adaptors, distance pieces, valves, etc and all other fittings to make the installation complete, as specified, all fittings to PN10 including a masonry chamber, and on the following main pipe sizes				
6.1	DN100mm PN10	No.	Rate Only		
6.2	DN75mm PN10	No.	1		
6.3	DN65mm PN10	No.	Rate Only		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No. 2 : TRANSMISSION MAINS

PN16 HDPE Compression fitting to DIN 8074/BS 5114 Equal Adapters DD90 female adapter /alves and Penstocks Air Valves Elanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, lange adaptors, distance pieces, and all fittings necessary to make he installation on pipes of the following sizes, all to PN10, include	No.	2		
DD90 female adapter <u>/alves and Penstocks</u> <u>Air Valves</u> <u>Flanged CI double orifice air relief valve, DN50mm, as specified</u> <u>flanges to ISO 2441, complete with isolating gate valve to ISO 7259,</u> <u>lange adaptors, distance pieces, and all fittings necessary to make</u>	No.	2		
Valves and Penstocks Air Valves langed CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, lange adaptors, distance pieces, and all fittings necessary to make	No.	2		
Air Valves Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, lange adaptors, distance pieces, and all fittings necessary to make				
Flanged CI double orifice air relief valve, DN50mm, as specified flanges to ISO 2441, complete with isolating gate valve to ISO 7259, lange adaptors, distance pieces, and all fittings necessary to make				
flanges to ISO 2441, complete with isolating gate valve to ISO 7259, lange adaptors, distance pieces, and all fittings necessary to make				
lange adaptors, distance pieces, and all fittings necessary to make				
he installation on pipes of the following sizes, all to PN10, include				
hamber as specified.				
DN40mm	No.	Rate Only		
DN50mm	No.	Rate Only		
DN65mm	No.	Rate Only		
DN75mm	No.	1		
DN100mm	No.	Rate Only		
Vashouts				
Vashout as specified in the drawings, complete with plastic				
compression pipe fittings; tee, drainage pipes, union ball valve, flap				
valve, stone masonry outfall structure and all other fittings necessary				
o make the complete installation on pipes of the following sizes; all to				
2N10 including valve surface box to detail.				
DN100mm	No.	Rate Only		
DN75mm	No.	1		
DN65mm	No.	-		
DN50mm	No.	Rate Only		
PIPEWORK-MANHOLES AND PIPEWORK ANCILLARIES				
Other Chambers				
Asonry air valve chamber, complete as specified in the drawings.				
and of the following depths				
Depth not exceeding 1.5m	No.	1		
/alve Surface Boxes				
securely attached to main body of surface box by chain or bolt, include				
lown pipe, complete as specified and to the following depths				
	N100mm N75mm N65mm N50mm IPEWORK-MANHOLES AND PIPEWORK ANCILLARIES Nather Chambers Masonry air valve chamber, complete as specified in the drawings, and of the following depths Pepth not exceeding 1.5m Yalve Surface Boxes Yalve surface box for DN100 - DN300 valves, with lockable cover ecurely attached to main body of surface box by chain or bolt, include own pipe, complete as specified and to the following depths	N100mm No. N75mm No. N65mm No. N50mm No. N50mm No. IPEWORK-MANHOLES AND PIPEWORK ANCILLARIES No. IPEWORK-MANHOLES AND PIPEWORK ANCILLARIES No. Inter Chambers No. Masonry air valve chamber, complete as specified in the drawings, and of the following depths No. Vepth not exceeding 1.5m No. Valve Surface Boxes Valve Surface Boxes Valve surface box for DN100 - DN300 valves, with lockable cover No.	N100mm No. Rate Only N75mm No. 1 N65mm No. Rate Only N50mm No. Rate Only Nb50mm No. Rate Only NEEWORK-MANHOLES AND PIPEWORK ANCILLARIES No. Rate Only IPEWORK-manholes No. No. Rate Only Interval No. No. No. Interval No. No. 1 Value Surface Boxes No. 1 Valve Surface do main body of	N100mm No. Rate Only N75mm No. 1 N065mm No. Rate Only N50mm No. Rate Only N50mm No. Rate Only No. No. Ind of the following depths No. Not exceeding 1.5m No. Yalve Surface Boxes No. Yalve surface box for DN100 - DN300 valves, with lockable cover ecurely attached to main body of surface box by chain or bolt, include

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No. 2 : TRANSMISSION MAINS

ltem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Reinstatement				
	Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads				
	for the following pipe sizes				
11	Not exceeding DN300mm	m	Rate Only		
	Surrounds				
	Pipe surrounds, of selected excavated granular material, for the				
	following pipe sizes				
12.1	Not exceeding DN200mm	m	55		
	Pipe surrounds, of imported granular material, for the following pipe				
12.2	Not exceeding DN200mm	m	120		
	Pipe surrounds, of mass concrete, for the following pipe sizes				
12.3	Not exceeding DN200mm	m	180		
	Concrete Stools and Thrust Blocks				
	Thrust Blocks				
	Mass concrete grade C15 thrust blocks for pipes and fittings, volume				
	0.1-0.2 m ³ , for the following pipe sizes				
13.1	Diameter not exceeding DN200mm	No.	6		
	Other Pipework Ancillaries				
	Marker Posts				
14	Marker posts for pipes, gate valves, air valves, washouts Total Carried to Collection	nr	20		
	lo. 2 : TRANSMISSION MAINS				
Item	Description	Unit	Qty.	Rate (UGx.)	Amount
No.	Description	Onit	હાપુ.		(UGx.)
	Bill No. 2 Collection				
	Page 8				
	Page 9				
	Page 10				
	Total Bill No. 2 Carried to Bill Summary	/	•		

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No. 4.3 : STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site slearance including trees, stumps and disposal of arising materials.	Item	1		
2	Reservoir				
	Erect a welded steel tower for reservoir support complete, include				
	foundations, columns, beams, acess ladders, plates, braces, walkway/				
	guardrail, base plates, anchor bolts, nuts, washers, etc, painting and				
	finishes; complete as specified and detailed in the drawings, of the				
	following height and reservior capacities.				
2.1	Height; 9.0m for (4No. x 10m ³ Tanks)	No.	1		
3	Plastic Tanks Supply and install a vertical cylindrical Rotational Moulded Polyethylene Water Storage Tank to DUS 1560: 2013 as manufactured by Ms Gentex Ltd. / Crest Tanks or any other approved complete with a lockable access man ways, inlet/ riser, ball float valve, overflow with insect screen, float type water level indicator and outlet/ down pipe with a strainer, washout and overflow connection, including interconnecting pipe work and fittings, as detailed in the drawings, supply specifications and of the following capacity.				
3.1	10m ³	No.	4		
4	150-200 micron union/ compresion type clear uPVC Y- Screen Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement screen element and seal ring :-				
4.1	DN75mm, PN10	No.	1		
5	150-200 micron union/ compresion type clear uPVC Y- Disc Filter, non corrosive, complete with all fittings, installation on the following GI pipe sizes, pressure ratings and supply of a pair of replacement disk element and seal ring :- [OPTIONAL]				
5.1	DN100mm, PN10	No.	Rate Only		
	DN75mm, PN10	No.	1		
	DN65mm, PN10	No.	Rate Only		
	Landscaping and Walkways	-			
C 4	Turfing for lawns inside fenced off compound; including filling with	m ²	150		
6.1	excavated topsoil and preparation of surfaces.				

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No. 3 : STORAGE RESERVOIR WORKS

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	500 x 500 x 50mm precast concrete paving slabs laid "Space out Stone method" between the gate, pump house and solar array in one raw, laid onto and including 200mm thick murram fill.	No.	Rate Only		
7 7.1	<u>Fences</u> Galvarnised wire Gauge10 chain link fence to BS 1722 with triple raw of barbed wire on top; height 2-2.5m.	m	60		
7.2	<u>Gates</u> Metal field gate to BS 3470; width 1.5m single leaf and height to match the fence.	No.	1		
	Provision and Placing of Concrete Ordinary Designed Mix Concrete				
8	Designed mix concrete, to BS 5328, with ordinary portland cement to BS 12, aggregate to BS882, for 10mm aggregate sizes and the following grades:				
3.1	Grade C15	m ³	2		
	Total Carried to Collection				
tem No.	o. 3 : STORAGE RESERVOIR WORKS Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	Bill No. 3 Collection				
	Page 11				
	Page 12				

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
	DEMOLITION AND SITE CLEARANCE				
	General Site Clearance				
1	General site clearance 1.5m wide working corridor along the pipeline	Item	1		
	route, including felling trees, grabing tree stumps and disposal of				
	arising materials.				
	PIPEWORK-PIPES				
2	Plastic Pressure Pipes- Distribution				
	HDPE pressure pipes to BS 3505, include unions / sockets, all to laid in				
	trench to the following depths not exceeding 1.5m				
2.1	OD63mm PN10	m	480		
2.2	OD75mm PN10	m	Rate Only		
2.3	OD90mm PN10	m	1150		
	PIPEWORK - FITTINGS AND VALVES				
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
3	Equal tees				
3.1	OD90mm	No.	1		
3.2	OD75mm	No.	1		
3.3	OD63mm	No.	Rate Only		
	Unequal tees				
3.5	OD90 x 75mm	No.	Rate Only		
3.6	OD90 x 63mm	No.	6		
	PN10 HDPE Compression fitting to DIN 8074/BS 5114				
	Plastic Pipe Fittings				
4	Couplers				
4.1	OD90mm	No.	Rate Only		
4.2	OD75mm	No.	Rate Only		
4.3	OD63mm	No.	Rate Only		
5	End caps				
5.1	OD90mm	No.	Rate Only		
5.2	OD75mm	No.	Rate Only		
5.3	OD63mm	No.	3		
	Total Carried to Collection		<u>I</u>	<u> </u>	

SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT BILL No.4 : DISTRIBUTION NETWORK

tem No.	Description	Unit	Qty.	Rate (UGx.)	Amount (UGx.)
6	Valves and Penstocks Air Vaves Flanged CI double orifice air relief valve, DN50mm, as specified ,flanges to ISO 2441, complete with isolating gate valve to ISO 7259, flange adaptors, distance pieces, and all fittings necessary to make the installation on pipes of the following sizes, all to PN10, include chamber as specified.				
6.2	OD90mm OD75mm OD63mm	No. No. No.	Rate Only Rate Only Rate Only		
7	Washouts Washout as specified in the drawings, complete with plastic compression pipe fittings; tee, drainage pipes, PVC union ball valve, flap valve and all other fittings necessary to make the complete installation on pipes of the following sizes; all to PN10 including valve surface box and stone masonry outfall structure to detail as per				
7.1	DN75mm DN65mm DN50mm	No. No. No.	Rate Only Rate Only Rate Only		
8	Farm Gate Connections Make DN50mm Irrigation Water Supply Hydrant connection to the distribution main, inclusive of PVC compressive ball valve and end cap complete with connector pipes and locakable chamber as detailed on Drawing No. OIS/NUC/SD/008, for the following mains sizes and all to PN10: -				
	DN65mm DN50mm	No. No.	Rate Only 5		
	Other Pipework Ancillaries Marker Posts				
9	Marker posts for pipes, gate valves, air valves, washouts	nr	40		
	<u>Reinstatement</u> Roads				
	Breaking up, temporary and permanent reinstatement of gravel roads for the following pipe sizes				
10	Not exceeding DN300mm	m	Rate Only		

CIVIL WORKS FOR OFF- FARM IRRIGATION INFRASTRUCTURE AND FACILITIES: LOT 3 EASTERN PROVINCE AREA SCHEME ID. 4.5: GWERI IN SOTOTI DISTRICT

Rate (UGx.) (UGx.)