



TENDER NO. RACIDA/USAIDBHA-2024/GR00169-003

PROPOSED REHABILITATION OF FIVE EARTH PAN

1.UMAR EARTH PAN

2.MALKAMARI – BURI EARTH PAN

3. HULLOW EARTH PAN

4. DERKALE - TARAMA EARTH PAN

5. HARWALE EARTH PAN

IN MANDERA COUNTY

CLOSING DATE: 15th AUGUST ,2024 AT 4.30 PM

LETTER OF INVITATION TO TENDER

TENDER NO. **RACIDA/USAIDBHA-2024/GR00169-003**

Rural Agency for community development and assistance RACIDA invites sealed tenders for the proposed rehabilitation of four earth pans: 1.Umur Earthpan 2.Malkamari -Buri Earthpan 3.Hullow Earth pan 4. Derkale - Tarama Earth pan 5. Harwale earth pan in Mandera County whose specifications are detailed in the Tender Documents. Interested and eligible bidders may inspect, review and submit their proposal of the same free of charge. Bidders who choose to bid should submit their applications to the procurement department.

Please note that:-

1. Bidders quotes should be net inclusive of all taxes, must be in Kenya Shillings and Shall remain valid for at least ninety (90) days from the closing date of the tender.
2. Bids must be accompanied by a bid security in the form and amount specified in the Tender Documents. The bid security must be valid for at least a period of thirty (90) days from the date of the tender opening.
3. Bidders must submit a proposed Works Programme, failure to which the tender will be non- responsive. Please note that the contract period will be Twelve (12) weeks.
4. Bidders MUST comply with Section A (Instructions to Tenderers) of the Tender Documents.
5. Bidders MUST fill all the forms in Section of the Tender Document except the Performance Bank Guarantee form and the Bank Guarantee for Advance Payment Form. Failure To Fill The Forms Comprehensively Will Render The Bid Non- Responsive.
6. Bidders MUST submit with their offer detailed technical specifications, technical data for the products they intend to supply as requested in the Tender Document.
7. Completed Tender documents are to be enclosed in plain, sealed envelopes marked with the Tender name: **Proposed Rehabilitation of 1.Umur Earthpan 2.Malkamari- Buri Earthpan 3.Hullow Earthpan 4. Darkale Tarama Earthpan 5.Harwale Earthpan in Mandera County and Tender Number : RACIDA/USAIDBHA-2024/GR00169-003** in accordance with the Instructions to Tenders in the tender documents and must be deposited in the tender box in RACIDA Mandera office on or before the date specified in the advertisement.

Bids must addressed to:
The Procurement Officer,
Rural Agency for Community Development and Assistance – RACIDA
 Email Address: procurement@racida.org
Mandera Office: Malkasuftu Road Next to Garanda Hotel or
Nairobi Office : Kinduruma Road, Top Plaza Ground Floor unit 9-12

So as to be received on or before 15th AUGUST ,2024 at 4.30 PM.

Call for Tenders Schedule:

	DATE	TIME*
Deadline for request for any clarifications from RACIDA	9 th August 2024	Before 4:30pm
Last date on which clarifications are issued by RACIDA	13 th August ,2024	Before 4 :30pm
Deadline for submission of tenders (receiving date, not sending date)	15 th AUGUST ,2024	Before 4:30 pm
Tender opening session by RACIDA	TBC	
Notification of award to the successful tenderer	TBC	
Signature of the contract	TBC	

8. Tenders will be opened on the date specified in the advertisement thereafter in the presence of the candidates or their representatives who choose to attend at the above address.

9. Rural Agency for Community Development and assistance (RACIDA) reserves the right to accept or reject in part or in whole any tender without giving reasons.

FORM OF TENDERER
TENDER No. RACIDA/USAIDBHA-2024/GR00169-003
The Procurement Officer,
Rural Agency for Community Development and Assistance – RACIDA
 Email Address: procurement@racida.org
Mandera Office: Malkasuftu Road Next to Garanda Hotel or
Nairobi Office : Kinduruma Road, Top Plaza Ground Floor unit 9-12

TENDER No. RACIDA/USAIDBHA-2024/GR00169-003 PROPOSED
REHABILITATION OF FIVE EARTH PAN IN MANDERA COUNTY.

In accordance with the Instructions to Tenderers, Conditions of Contract, Specifications and Bills of Quantities for the execution of the above named Works, we, the undersigned offer to rehabilitate and complete such Works and remedy any defects therein for the sum of:

Kshs *[Amount in figures]*
Kenya Shillings.....
..... *[Amount in words]*

We undertake, if our tender is accepted, to commence the works as soon as is reasonably possible after the receipt of the management's notice to commence, and to complete the whole of the works comprised in the Contract within the time stated in the Appendix to Conditions of Contract.

1. We agree to abide by this tender for a period of 90 days from the date of tender opening, and shall remain binding upon us and may be accepted at any time before the expiry of that period.
2. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.
3. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this day of20.....
Signaturein the capacity of

duly authorized to sign tenders for and on behalf of:

..... *[Name of Tenderer]*
of*[Address of Tenderer]*

PIN No.

VAT CERTIFICATE No

Witness: Name
Address
Signature

FORM OF TENDER SECURITY

WHEREAS.....

(hereinafter called "the Tenderer"

) has

submitted his tender dated.....for the rehabilitation
of

.....
..... (Name of Contract)

KNOW ALL PEOPLE by these presents that WE.....

g our havin
registered office at

..... (hereinafter called "the Bank"), are b
ound
unto

..... (hereinafter called "the Employer") i
n the
sum of KShs.....

for which payment well and truly to be
made

to the said Employer, the Bank bind itself, its successors and assigns by these presents sealed
with

the Common Seal of the said Bank this.....Day of
..... 20.....

THE CONDITIONS of this obligation are:

1. If after tender opening the tenderer withdraws his tender during the period of tender
Validity specified in the instructions to tenderers
Or
2. If the tenderer, having been notified of the acceptance of this tender by the Employer during
the period of tender validity:
 - a. Fails or refuses to execute the form of Agreement in accordance with the Instruc
tions
to Tenderers, if required; or
 - b. Fails or refuses to furnish the Performance Security, in accordance with the
Instructions to Tenderers; or
 - c. Rejects a correction of an arithmetic error in the tender

We undertake to pay to the Employer up to the above amount upon receipt of his first
written

demand, without the Employer having to substantiate his demand, provided that in his deman
d the

Employer will note that the amount claimed by him is due to him, owing to the occurrence of o
ne or

both of the two conditions, specifying the occurred condition or conditions.
This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the said date.

[Date]

[Signature of the Bank]

[Witness]

[Seal]

REHABILITATION OF EARTH PANS

PROJECT :

Introduction

RACIDA has worked in Mandera County for more than 17 years and has focused on building the resilience of rural pastoralists' communities in the County. This is in line with the organization's core mandate of enhancing self-reliance and prosperity amongst vulnerable pastoralist communities through the promotion of better livelihood systems and sustainable use of natural resources. In this project, RACIDA is working toward achieving a lasting impact on the social and economic development of the targeted communities in Mandera County by implementing activities in WASH; agriculture and food security; and nutrition.

Through USAID/BHA program "Integrated Recovery Response to Drought and Flood in Mandera County, Kenya (IRR) the proposed integrated interventions are Nutrition, WASH, agriculture and livestock and food security. Through this program, RACIDA's project plans is to increased access to safe water for households and livestock, reduced morbidity and mortality as a result of malnutrition and improved food security at the household level in Mandera east, Mandera North, Banisa, Kiliweheri, Mandera west, Mandera south, Lafey, Kotulo and Arabia sub-counties. Proposed activities will include improvement of access to safe drinking water through rehabilitation of key strategic Boreholes, Earth pans, Environmental and Hygiene promotion, and nutrition aspect as well as food security interventions. The proposed interventions will reduce walking distance and time taken to fetch water by mothers and girls. The action will also reduce congestion in the main water points and reduce livestock pasture and water distance during drought period. Earth pans at dry grazing zones will serve livestock with water near the grazing areas to avoid long distance trekking to main water points. Existing water committees in main water points will be trained on best practice of managing water as a scarce resource.

REHABILITATION OF 1. HULLOW EARTH PAN 2. MALKAMARI -BURI EARTH PAN 3.UMUR EARTH PAN 4. DERKALE - TARAMA EARTH PAN 5. HARWALE EARTH PAN IN MANDERA COUNTY WITH A CAPACITY OF 38,000, 45,000, 45,000, 35,000 and 40,000 CUBIC METRES RESPECTIVELY.

In Mandera County, Crisis (IPC 3) area outcomes are projected to continue until mid-2024 as households recover from historic drought and floods experienced in late 2023. Currently (March 2024), 20% of the county is facing acute food insecurity of IPC 3 (Crisis) or ICP 4 (Emergency), with 143,850 (15%) in IPC 3 and 47,950 (5%) in IPC 4. According to the NDMA February monthly bulletin, 69% of the households monitored had acceptable Food Consumption score while there was no significant change on the Coping Strategy Index (19) compared the previous month.

Forage and water availability in the County have significantly improved following the above-average 2023 short rains season, supporting the recovery of livestock production. The livestock body condition is fair to good across all livelihood zones, the livestock values are above average, and household incomes are improving, however, milk production remains below average as livestock gradually recover. The predicted above-average March to May 2024 long rains are expected to further drive improvements as livestock birth rates are expected to increase and therefore milk production and good livestock body conditions are also expected to increase incomes from the sale of livestock. These favorable conditions are expected to improve household food access and reduce the reliance on coping strategies, however, households that lost most or lost their entire herds remain vulnerable and need support as they build back their livelihoods. In addition, the Mandera, County Integrated Development Plan (CIDP) states that pastoralism is the main livelihood source for 72% of the population, however, according to RACIDA's rapid assessment, 98% of the indicated that livestock diseases and lack of vaccines are the major challenges facing livestock production. Mandera County sharing boundaries with Somalia and Ethiopia where livestock disease surveillance and vaccination is limited is exposed to frequent livestock disease outbreaks. In this regard, there is need to provide support to

the county Ministry of Livestock to conduct community-level disease surveillance for early detection. Access to essential health and nutrition services remains a challenge for most of the communities in the County. Currently, there are 102 operational health facilities spread across the county making service provision difficult for the sparsely settled pastoralist communities. A rapid assessment conducted by RACIDA in February 2024 showed that the average distance to the health facility was 12 km. The provision of outreach services in the hard-to-reach areas and for the mobile communities will remain a critical strategy for the county to increase access to services and improve the performance of key health and nutrition indicators that are essential for child survival. Global Acute Malnutrition (GAM) rates based on the July 2023 SMART survey were critical at 21.2% and way above the emergency threshold as per WHO standards and projected to remain the same in the period up to June 2024 requiring sustained nutrition treatment and prevention interventions to prevent further deterioration and reverse the trends. On child care practices, the recent SMART survey shows that 40% of the children 6-23 months had acceptable Minimum Meal Frequency and only 15% had the Minimum Acceptable Diet. In addition, only 62% of the children were breastfed beyond 1 year compared to the WHO recommendation of continued breastfeeding up to 2 years of age. The July 2023 SMART survey reported sub-optimal hygiene outcomes in the county. According to the findings, knowledge of handwashing was high (79%) but the practice of hand washing at critical times was low at 39%. The same survey also established that about 23% of the population practice open defecation which increases the risk of diseases in the involved communities. These findings show a slight improvement compared to the previous year where handwashing at critical times was 19% and the proportion of those practicing open defecation was 30%. This calls for sustained community-level knowledge and skills awareness campaigns with practical interventions to change the behavior of the communities and lead them towards adopting optimal hygiene practices.

With the above situation in the county, there is a need to sustain the humanitarian response in the county targeting the most vulnerable households and communities while strengthening the capacity of community systems and infrastructures to mitigate and respond to crisis. This approach will assist vulnerable households to access immediate services while protecting and building their remaining livelihoods.

PRICE SCHEDULE

The rates and prices inserted in the Bills of Quantities/Price Schedule are to be the full inclusive costs of the works, described under the items, complete in place and in accordance with the specifications, including costs, expenses, and taxes which may be required in and for the construction of the works described, together with any temporary works and installations which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents

1. REHABILITATION OF HULLOW WATER PAN

BILL 1: PERIMTER FENCE CONSTRUCTION					
B1.1	PERIMTER FENCE CONSTRUCTION	UNIT	QTY	RATE	AMOUNT
B1.1.2	Provide and install in 0.6"deep holes and concrete surround, 3.0m high 150 by 150 mm precast concrete fencing post @ 3000mm spacing including strainer post to the perimeter of the pan impoundment area 12 braces.	Nr	320		
B1.1.3	Provide and install Chain Link, 2mm thick, 50mm mesh size in 18m Roll (2.5 m Height) Heavy Gauge to	M	600		
B1.1.4	Barbed wire Ngombe Gauge 14 600m perimeter 5 strands.	M	3000		
B1.1.5	Fabricate, deliver and install double leaf steel gate 2500 mm high X 4000 mm wide; of equal leaves each 2000 mm hinged on concrete columns	Nr	1		
	Subtotal fencing				
B1.2					
B1.2.1	Supply, Erect and label project signpost as directed by the Engineer	Item			
	sub total branding				
BILL 2: CONSTRUCTION OF 2 NO. 10M LONG CATTLE TROUGH(S)					
	Excavations				
B2.1	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m ²	61		
B2.2	Excavate for foundation strip commencing at stripped levels depth not exceeding 1.50m deep	m ³	6		
B2.3	Extra-over for excavation in hard rock	m ³	1		
B2.4	Remove surplus excavated material from site	m ³	4		
B2.5	Well rammed backfilling of preselected excavated materials in foundations	m ³	5		
	Sub-Total 1 : Excavations				
	Superstructure				
B2.6	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	11		

B2.7	Treat hardcore surface with approved Dragnet FT' anti-termite chemical treatment.	m ²	11		
	Concrete work				
B2.8	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B2.9	50mm blinding layer under foundations	m ³	1		
B2.1	50mm blinding layer on hardcore surfaces	m ³	4		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.11	Strip foundation	m ³	3		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.12	100mm thick reinforced floor	m ³	1		
B2.13	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	2		
	Reinforcement				
B2.14	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	72		
B2.15	High tensile mild steel reinforcement bars in assorted sizes	kg	400		
	Sawn formwork				
B2.16	Formwork to sides of foundation strip girth 150-225mm	m	41		
B2.17	Formwork to edges of floor slab girth not exceeding 75mm	m	21		
	Walling				
B2.18	150 Thick solid concrete block walling	m ²	5.4		

	Finishes				
	Cement and sand mortar (1:3) in:				
B2.19	15mm thick plaster to internal side of wall with water proof cement	m ²	20		
B2.2	12mm thick plaster to external side of wall	m ²	7		
B2.21	15mm thick plaster to floor finishes with water proof cement	m ²	8		
	Sub-Total 2 Superstructure				
	Galvanised mild steel pipes Class B medium thickness. Including jointing fittings and fixed as described				
B2.22	50 mm Diameter inlet pipe chased through concrete wall 200 mm long including fittings and stop cork	No	2		
B2.23	50mm diameter PVC draw off pipe 300mm long with and including a gate valve	No	1		
	Sub-total 3 Fixtures				
	Summary Costs				
	Sub-Total 1 : Excavations				
	Sub-Total 2 Superstructure				
	Sub-total 3 Fixtures				
	Total for 1No. Trough		1		
	TOTAL FOR 2No. TROUGH CARRIED TO MAIN SUMMARY		2		
BILL NO.3: CONSTRUCTION OF 1No. YARD TAP					
	SITE CLEARANCE AND SETTING OUT				
B3.1	Clear site of all bushes, shrubs, etc and dispose as directed by the Engineer	M ²	4		
	EXCAVATION AND BACKFILLING				
	Top soil				
B3.2	Rates to include removal of top vegetable soil average 250mm deep and dispose as directed by the Engineer.	M ²	4		
	HARDCORE				
B3.3	Well watered hard core packing in layers 150mm thick to make up levels average 300mm deep.	M ³	0.5		

B3.4	50mm blinding to hardcore bed surfaces in quarry dust/murram or equal and approved.	M ²	1		
	DPM AND DPC				
B3.6	1000gauge polythene in dpm on blinded surfaces.	M ²	2		
	SAWN FORMWORK				
B3.6	To vertical edges of floor slab 75 - 150 mm high.	M	4		
	REINFORCEMENT				
B3.8	B.R.C mesh REF no 65 to concrete base/floor slab and drainage grooves	M ²	1		
	CONCRETE WORKS IN SUBSTRUCTURE				
	Rates to include providing and placing the following concrete mixes including all form-work.				
	Concrete Mix 1:2:4				
B3.9	Ditto in 100mm concrete base slab including drainage grooves, and apron	M ²	0.5		
	Masonry Walling				
B3.10	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished on one side. Rate to included mild all reinforcement at every course	M ²	1		
	FINISHES				
B3.11	25mm thick sand cement lime plaster to external surfaces.	M ²	2		
B3.12	25mm thick sand cement lime plaster to floor surface trowel finished	M ²	1		
	PIPE WORK AND FITTINGS				
	Rates include supplying of pipe fittings including all jointing 'accessories,' handling, fixing, jointing and testing to the fetching bay. Rates also to include cutting and joining pipes.				
B3.13	110mm dia. waste pipe to be laid between the gully trap of the fetching area and the soak pit.	M	6		
B3.14	25mm dia. GI pipe class C to be connected to the distribution main	M	8		

	GI Pipe Fittings (Rates to include all connections)				
B3.15	25mm diameter Gate valve	No.	1		
B3.16	25mm diameter Heavy duty water taps(Peggler)	No.	2		
B3.16	25mm diameter Union	No.	1		
B3.18	25mm diameter nipple	No.	2		
B3.19	25mm dia.1m long stand pipe	No.	2		
B3.20	25mm diameter 90o bend/elbow	No.	4		
B3.21	25mm diameter Coupler/Socket	No.	2		
B3.22	25mm diameter water meter	No.	1		
	CHAMBERS				
B3.23	Masonry gulley trap chamber size 1000 x 1000 x 1000mm high with 100mm thick sides and rebated top edge for and including including 600 x 600 x 50mm thick precast concrete cover including bedding UPVC gulley, dishing base of gulley, all necessary formwork, excavation and disposal. As per the drawings.	LS	1		
B3.24	Masonry soak away pit size 1200 x1200 x 1200mm deep with concrete cover as per the drawing. Rates to include 200mm thick granular filled layer, excavation, all necessary formwork and disposal of surplus materials.	No.	1		
	TOTAL FOR 1 STAND TAPS CARRIED TO MAIN SUMMARY				

BILL 4: INSTALLATION OF A 300M PIPELINE EXTENSION

B4.1	Allow for excavating and backfilling of pipeline routes for depth not exceeding 0.9m for pipeline reticulation system from the sump well to the 10,000Lts PVC tank placed on 1.5m Masonry platform and to to the yard tap and toughs.	M	300		
B4.2	Purchase , supply and laying of 50 mm (2 inches) HDPE PN10 the rate also include	M	300		

B4.3	Construction of 2 masonry lockable inspection chambers at troughs and the draw off point 600mm*600mm*1000mm	item	2		
B4.4	Pipes and fitting				
	Provide, lay, joint and test the following fittings. Rates to include for all jointly materials, cutting wastage. All fittings to be PN10 Rating				
B4.5	50mm (2 inches) water kent meter	Pcs	1		
B4.6	sockets 2 inch GI	Pcs	10		
B4.7	50mm (2 inches) GI gate valves	Pcs	3		
B4.8	50mm (2 Inches) tee	Pcs	4		
B4.9	50mm (2 inches) -25mm Inch GI sockets reducer	Pcs	2		
B4.1	50mm (2 inches) GI Elbow	Pcs	5		
B4.11	Other installation sundries , thread tapes, tangent glue	Item	1		
	TOTAL PIPELINE CARRIED TO MAIN SUMMARY				

Bill No5: INSTALLATION OF 10,000L UPVC TANK AND CONSTRUCTION OF A 1.2M MASONRY PLATFORM					
B5.1	Supply kentainer tank or its equivalent of capacity 10,000ltrs. Rate to include transport to site and overheads	No	1		
	Construction Masonry r platform				
B5.2	Clear of all ushes and shrus and remove deris from tank site	SM	25		
B5.3	Excavation 3500mm x 3500mm for contruction of base as shown in the drawing	M ³	3.7		
B5.4	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	50		
	Concrete work				
B5.5	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B5.6	50mm blinding layer under foundations	m ³	6.125		
B5.7	50mm blinding layer on hardcore surfaces	m ³	6.125		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.8	Strip foundation	m ³	2		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.9	100mm thick reinforced floor	m ³	2		
B5.1	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	1.5		
	Reinforcement				

B5.11	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	12.25		
B5.12	High tensile mild steel reinforcement bars in assorted sizes	kg	500		
	Sawn formwork				
B5.13	Formwork to sides of foundation strip girth 150-225mm	m	14		
B5.14	Formwork to edges of floor slab girth not exceeding 75mm	m	20		
	Walling				
B5.15	150 Thick solid concrete block walling	m ²	8.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B5.16	15mm thick plaster to internal side of wall with water proof cement	m ²	16.8		
B5.17	12mm thick plaster to external side of wall	m ²	15		
B5.18	15mm thick plaster to floor finishes with water proof cement	m ²	12.25		
	Pipe works(Rate include installation)				
B5.19	Inlet pipe of PPR 50mm DN	M	12		
B5.2	Fittings and Appurtenances				
B5.21	2 inch GI Elbow	No	5		
B5.22	2 inch GI long nipple	No	2		
B5.23	2 inch GI back nuts	No	4		
B5.24	2inch gate valve Peglar	No	1		
B5.25	2 inch GI sockets	No	5		
B5.26	Other installation sundries including 5 thread tapes, 1tangent glue	item	1		
B5.27	Construction of a masonry lockable inspection chambers at the tank base 1000mm*1000mm*1000mm	No	1		
B5.28	Provide material to construct shade as shown in the drawing	item	1		
	TOTAL UPVC TANK ON MASONRY PLATFORM CARRIED TO MAIN SUMMARY				

BILL 6: DESILTING OF WATER PAN					
B6.1	PRELIMINARIES				
B6.1.1	Mobilization and Demobilization of plant to and from project site	LS	1		
B6.1.2	Allow for Access Road provision to the site before and after construction works; rate to include clearing site of all trees, bushes, shrubs, concrete, etc and dispose as specified by the Engineer	LS	1		
	<u>Sub Total 1: Preliminaries</u>	-	-		
B6.2	EXCAVATION				
B6.2.1	Bulk excavations shall include for strutting. Shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means				
B6.2.2	Excavate silt soil to create a pan of external size 102 mx85mx3m, with side slopes of 1:2.5 and cart away to embankment. Do not desilt beyond 1.2m	m ³	38000		
B6.2.3	Disposal of excavated material to distance not away 2km	m ³	38000		
	Sub total 2: Excavations	-	-		
B6.3	CONSTRUCTION OF SILT TRAP/COLLECTOR CHANNELS				
B6.3.1	Excavate normal soil to create the silt trap as per drawing and cart away to embankment (35 m x 25m x 3.0 m)	M ³	1805		
B6.3.2	Construct concrete sill (mix 1:2:4) at the inlet to the outflow channel	M ³	5		
B6.3.3	Provide riprap protection edges silt trap walls and pan inlet walls and outflow channel as shown in drawings to include joining cement screed	M ²	340		
-	Sub Total 3: Silt trap	-	-		
B6.4	CONSTRUCTION OF INLET & OUTFLOW CHANNELS				
B6.4.1	Excavate in normal soil to create the inflow and outflow channel as per the drawings and cart away to spoil	M ³	350		
	Sub total 4 Inlet and outlet				

BILL NO 7: INFILTRATION GALLERY AND WELL CONSTRUCTION					
	INFILTRATION GALLERY AND WELL				
B7.1	Excavation for disposal below reservoir level to depth not exceeding 1.0m	CM	12		
B7.2	Ditto in hard material depth not exceeding 1.0m	CM	9		
B7.3	Reinforced concrete grade 25/20 to slabs and ring beam	CM	4		
B7.4	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished d on one side	M	120		
B7.5	High Yield tensile steel reinforcement to concrete Diameter 8-16	KG	2000		
	Sub total				
B7.6	Supply and placement/ fitting of the following to construct galleries;				
B7.7	Supply material and construct vertical offtake system as per the drawing	Ls	1		
B7.8	160mm diameter HDPE PN16 water collection pipes	LM	50		
B7.9	160mm Butt/Electro Fused End Caps	No	6		
B7.1	160mm Compression Blanking plugs	No	6		
B7.11	Back fill pipe trenches	CM	150		
	Sub total				
	Allow for provision and fitting of:				
B7.12	600x 600mm lockable plastic HG manhole cover	No	1		
B7.13	Air vent assemblies made of 2 x50mm Elbows, 1 x 50mm barrel nipple, 50mm piece of pipe 300mm long and pieces of coffee tray and mosquito gauze wires; fitted to the	Sets	1		

	well roof slab				
B7.14	Internal access foot rests 500mm apart all down the well walls, made of D 16 reinforcement bars	No	280		
B7.15	300mm long, 150mm diameter pipe fitted through roof slab next to lockable manhole cover for pump insertion and removal and provided with a 152mm standard Borehole Cap	No	1		
B7.16	Allow for land scaping around completed shallow sump well	Item	1		
	Sub total				
	TOTAL FOR OFFTAKE SYSTEM AND SUMP WELL CARRIED TO MAIN SUMMARY				

BILL 8: INSTALLATION OF A SOLAR PUMPING SYSTEM

B8.1	Dayliff DS 14/7 2.2KW Pump c/w Motor	No	1		
B8.2	JA Monocrystalline PV Modules 415	No	10		
B8.3	Grundfos RSI003 3kw pump controller	No	1		
B8.4	PV disconnect switch	No	1		
B8.5	Wellprobe sensor	No	1		
	Supply and installation of Cables and accessories				
B8.6	4mm ² 1-submersible cable	M	10		
B8.7	2.5 mm ² twin flat cable for solar wiring	M	30		
B8.8	1.5mm ² 2-core U/G cable	No	25		
B8.9	earthrod with clamp	No	1		
B8.10	Electrode cable	M	10		
B8.11	Adaptor box 4'x4'x3''	No.	1		

B8.12	Install a manual change over switch to allow hybrid system including Londex well sensor cable- brown and black with pencil electrodes	No.	1		
B8.13	Submersible cable splicing joint	No.	1		
B8.14	2" x 6" Borehole Cover c/w Sundries	No.	1		
B8.15	25mm Airline pipes	No.	2		
B8.16	2.5mm ² x 2 Core U/G Cable	M	10		
B8.17	Supply and 2" Install water meter (Kent) as Sensus or equivalent, one non-return valve and all other assorted fittings necessary for testing and commissioning.	No.	1		
B8.18	Other Installation accessories and connections	No.	1		
	Solar Structure and accessories				
B8.19	Supply and installation of heavy duty 3m long 2" P.E pipe drop pipes as Dayliff drop pipes or approved equivalent, and necessary fittings and connection to the pump to deliver water to the elevated tank- offering reduced friction for increased operating efficiency, corrosion resistance, light weight and durability from the borehole cap to the delivery tank	No	2		
B8.20	Design as per radiations day angles, Fabrication and installation of solar support structure for the specified solar pannels. Rate to include for system testing. Use H- Beams cross section 100x100mm with 75x75x6mm ties and 50mmx50mmx6mm angle sections support to 38mmx6mm flat bars to hold pannels tight into position. All joints braced. Height of structure 5m above ground	Item	1		
B8.21	Supply and Installation and testing of 1No. Chlorination dosers and supply of 2T chlorine chemicals(170 lit chemical tank, dosing pump, 125w 12v solar panel, 100ah 12v sealed solar battery, Izzy 350w 12v dc inverter and Steca 20A charge controller)	Item	1		
B8.22	Transport, Installation, testing and commissioning		1		

TOTAL FOR SOLAR PUMPING SYSTEM CARRIED TO MAIN SUMMARY				
---	--	--	--	--

2. REHABILITATION OF DERKALE TARAMA WATER PAN

BILL 1: PERIMTER FENCE CONSTRUCTION					
B1.1	PERIMTER FENCE CONSTRUCTION	UNIT	QTY	RATE	AMOUNT
B1.1.2	Provide and install in 0.6" deep holes and concrete surround, 3.0m high 150 by 150 mm precast concrete fencing post @ 3000mm spacing including strainer post to the perimeter of the pan impoundment area 12 braces.	Nr	320		
B1.1.3	Provide and install Chain Link, 2mm thick, 50mm mesh size in 18m Roll (2.5 m Height) Heavy Gauge to	M	600		
B1.1.4	Barbed wire Ngombe Gauge 14 600m perimeter 5 strands.	M	3000		
B1.1.5	Fabricate, deliver and install double leaf steel gate 2500 mm high X 4000 mm wide; of equal leaves each 2000 mm hinged on concrete columns	Nr	1		
	Subtotal fencing				
B1.2	BRANDING & PROJECT SIGNPOST				
B1.2.1	Supply, Erect and label project signpost as directed by the Engineer	Item			
	sub total branding				
BILL 2: CONSTRUCTION OF 2 NO. 10M LONG CATTLE TROUGH(S)					
	Excavations				
B2.1	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m ²	61		
B2.2	Excavate for foundation strip commencing at stripped levels depth not exceeding 1.50m deep	m ³	6		
B2.3	Extra-over for excavation in hard rock	m ³	1		
B2.4	Remove surplus excavated material from site	m ³	4		
B2.5	Well rammed backfilling of preselected excavated materials in foundations	m ³	5		
	Sub-Total 1 : Excavations				
	Superstructure				

B2.6	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	11		
B2.7	Treat hardcore surface with approved Dragnet FT' anti-termite chemical treatment.	m ²	11		
	Concrete work				
B2.8	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B2.9	50mm blinding layer under foundations	m ³	1		
B2.1	50mm blinding layer on hardcore surfaces	m ³	4		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.11	Strip foundation	m ³	3		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.12	100mm thick reinforced floor	m ³	1		
B2.13	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	2		
	Reinforcement				
B2.14	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	72		
B2.15	High tensile mild steel reinforcement bars in assorted sizes	Kg	400		
	Sawn formwork				
B2.16	Formwork to sides of foundation strip girth 150-225mm	M	41		
B2.17	Formwork to edges of floor slab girth not exceeding 75mm	M	21		

	Walling				
B2.18	150 Thick solid concrete block walling	m ²	5.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B2.19	15mm thick plaster to internal side of wall with water proof cement	m ²	20		
B2.2	12mm thick plaster to external side of wall	m ²	7		
B2.21	15mm thick plaster to floor finishes with water proof cement	m ²	8		
	Sub-Total 2 Superstructure				
	Galvanised mild steel pipes Class B medium thickness. Including jointing fittings and fixed as described				
B2.22	50 mm Diameter inlet pipe chased through concrete wall 200 mm long including fittings and stop cork	No	2		
B2.23	50mm diameter PVC draw off pipe 300mm long with and including a gate valve	No	1		
	Sub-total 3 Fixtures				
	Summary Costs				
	Sub-Total 1 : Excavations				
	Sub-Total 2 Superstructure				
	Sub-total 3 Fixtures				
	Total for 1No. Trough		1		
	TOTAL FOR 2No. TROUGH CARRIED TO MAIN SUMMARY		2		

BILL NO.3: CONSTRUCTION OF 1No. YARD TAP

	SITE CLEARANCE AND SETTING OUT				
B3.1	Clear site of all bushes, shrubs, etc and dispose as directed by the Engineer	M ²	4		
	EXCAVATION AND BACKFILLING				
	Top soil				
B3.2	Rates to include removal of top vegetable soil average 250mm deep and dispose as directed by the Engineer.	M ²	4		

	HARDCORE				
B3.3	Well watered hard core packing in layers 150mm thick to make up levels average 300mm deep.	M ³	0.5		
B3.4	50mm blinding to hardcore bed surfaces in quarry dust/murram or equal and approved.	M ²	1		
	DPM AND DPC				
B3.6	1000gauge polythene in dpm on blinded surfaces.	M ²	2		
	SAWN FORMWORK				
B3.6	To vertical edges of floor slab 75 - 150 mm high.	M	4		
	REINFORCEMENT				
B3.8	B.R.C mesh REF no 65 to concrete base/floor slab and drainage grooves	M ²	1		
	CONCRETE WORKS IN SUBSTRUCTURE				
	Rates to include providing and placing the following concrete mixes including all form-work.				
	Concrete Mix 1:2:4				
B3.9	Ditto in 100mm concrete base slab including drainage grooves, and apron	M ²	0.5		
	Masonry Walling				
B3.10	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished on one side. Rate to included mild all reinforcement at every course	M ²	1		
	FINISHES				
B3.11	25mm thick sand cement lime plaster to external surfaces.	M ²	2		
B3.12	25mm thick sand cement lime plaster to floor surface trowel finished	M ²	1		
	PIPE WORK AND FITTINGS				
	Rates include supplying of pipe fittings including all jointing 'accessories,' handling, fixing, jointing and testing to the fetching bay. Rates also to include cutting and joining pipes.				
B3.13	110mm dia. waste pipe to be laid between the gulley trap of the fetching area and the soak pit.	M	6		

B3.14	25mm dia. GI pipe class C to be connected to the distribution main	M	8		
	GI Pipe Fittings (Rates to include all connections)				
B3.15	25mm diameter Gate valve	No.	1		
B3.16	25mm diameter Heavy duty water taps(Peggler)	No.	2		
B3.16	25mm diameter Union	No.	1		
B3.18	25mm diameter nipple	No.	2		
B3.19	25mm dia.1m long stand pipe	No.	2		
B3.20	25mm diameter 90o bend/elbow	No.	4		
B3.21	25mm diameter Coupler/Socket	No.	2		
B3.22	25mm diameter water meter	No.	1		
	CHAMBERS				
B3.23	Masonry gully trap chamber size 1000 x 1000 x 1000mm high with 100mm thick sides and rebated top edge for and including including 600 x 600 x 50mm thick precast concrete cover including bedding UPVC gully, dishing base of gully, all necessary formwork, excavation and disposal. As per the drawings.	LS	1		
B3.24	Masonry soak away pit size 1200 x1200 x 1200mm deep with concrete cover as per the drawing. Rates to include 200mm thick granular filled layer, excavation, all necessary formwork and disposal of surplus materials.	No.	1		
	TOTAL FOR 1 STAND TAPS CARRIED TO MAIN SUMMARY				
BILL 4: INSTALLATION OF A 300M PIPELINE EXTENSION					
B4.1	Allow for excavating and backfilling of pipeline routes for depth not exceeding 0.9m for pipeline reticulation system from the sump well to the 10,000Lts PVC tank placed on 1.5m Masonry platform and to to the yard tap and toughs.	M	300		

B4.2	Purchase , supply and laying of 50 mm (2 inches) HDPE PN10 the rate also include	M	300		
B4.3	Construction of 2 masonry lockable inspection chambers at troughs and the draw off point 600mm*600mm*1000mm	item	2		
B4.4	Pipes and fitting				
	Provide, lay, joint and test the following fittings. Rates to include for all jointly materials, cutting wastage. All fittings to be PN10 Rating				
B4.5	50mm (2 inches) water kent meter	Pcs	1		
B4.6	sockets 2 inch GI	Pcs	10		
B4.7	50mm (2 inches) GI gate valves	Pcs	3		
B4.8	50mm (2 Inches) tee	Pcs	4		
B4.9	50mm (2 inches) -25mm Inch GI sockets reducer	Pcs	2		
B4.1	50mm (2 inches) GI Elbow	Pcs	5		
B4.11	Other installation sundries , thread tapes, tangent glue	Item	1		
	TOTAL PIPELINE CARRIED TO MAIN SUMMARY				
Bill No5: INSTALLATION OF 10,000L UPVC TANK AND CONSTRUCTION OF A 1.2M MASONRY					

PLATFORM					
B5.1	Supply kentainer tank or its equivalent of capacity 10,000ltrs. Rate to include transport to site and overheads	No	1		
	Construction Masonry r platform				
B5.2	Clear of all ushes and shrus and remove deris from tank site	SM	25		
B5.3	Excavation 3500mm x 3500mm for contruction of base as shown in the drawing	M ³	3.7		
B5.4	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	50		
	Concrete work				
B5.5	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B5.6	50mm blinding layer under foundations	m ³	6.12 5		
B5.7	50mm blinding layer on hardcore surfaces	m ³	6.12 5		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.8	Strip foundation	m ³	2		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.9	100mm thick reinforced floor	m ³	2		
B5.1	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	1.5		
	Reinforcement				
B5.11	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	12.2 5		

B5.12	High tensile mild steel reinforcement bars in assorted sizes	Kg	500		
	Sawn formwork				
B5.13	Formwork to sides of foundation strip girth 150-225mm	M	14		
B5.14	Formwork to edges of floor slab girth not exceeding 75mm	M	20		
	Walling				
B5.15	150 Thick solid concrete block walling	m ²	8.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B5.16	15mm thick plaster to internal side of wall with water proof cement	m ²	16.8		
B5.17	12mm thick plaster to external side of wall	m ²	15		
B5.18	15mm thick plaster to floor finishes with water proof cement	m ²	12.2 5		
	Pipe works(Rate include installation)				
B5.19	Inlet pipe of PPR 50mm DN	M	12		
B5.2	Fittings and Appurtenances				
B5.21	2 inch GI Elbow	No	5		
B5.22	2 inch GI long nipple	No	2		
B5.23	2 inch GI back nuts	No	4		
B5.24	2inch gate valve Peglar	No	1		
B5.25	2 inch GI sockets	No	5		
B5.26	Other installation sundries including 5 thread tapes, 1 tangent glue	item	1		
B5.27	Construction of a masonry lockable inspection chambers at the tank base 1000mm*1000mm*1000mm	No	1		
B5.28	Provide material to construct shade as shown in the drawing	item	1		
	TOTAL UPVC TANK ON MASONRY PLATFORM CARRIED TO MAIN SUMMARY				
BILL 6: DESILTING OF WATER PAN					
B6.1	PRELIMINARIES				
B6.1.1	Mobilization and Demobilization of plant to and from project site	LS	1		

B6.1.2	Allow for Access Road provision to the site before and after construction works; rate to include clearing site of all trees, bushes, shrubs, concrete, etc and dispose as specified by the Engineer	LS	1		
	<u>Sub Total 1: Preliminaries</u>	-	-		
B6.2	EXCAVATION				
B6.2.1	Bulk excavations shall include for strutting. Shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means				
B6.2.2	Excavate silt soil to create a pan of external size 102 mx85mx3m, with side slopes of 1:2.5 and cart away to embankment. Do not desilt beyond 1.2m	m ³	35000		
B6.2.3	Disposal of excavated material to distance not away 2km	m ³	35000		
	Sub total 2: Excavations	-	-		
		-	-		
B6.3	CONSTRUCTION OF SILT TRAP/COLLECTOR CHANNELS				
B6.3.1	Excavate normal soil to create the silt trap as per drawing and cart away to embankment (35 m x 25m x 3.0 m)	M ³	1805		
B6.3.2	Construct concrete sill (mix 1:2:4) at the inlet to the outflow channel	M ³	5		
B6.3.3	Provide riprap protection edges silt trap walls and pan inlet walls and outflow channel as shown in drawings to include joining cement screed	M ²	340		
-	Sub Total 3: Silt trap	-	-		
B6.4	CONSTRUCTION OF INLET & OUTFLOW CHANNELS				
B6.4.1	Excavate in normal soil to create the inflow and outflow channel as per the drawings and cart away to spoil	M ³	350		
	Sub total 4 Inlet and outlet				
BILL NO 7: INFILTRATION GALLERY AND WELL CONSTRUCTION					

	INFILTRATION GALLERY AND WELL				
B7.1	Excavation for disposal below reservoir level to depth not exceeding 1.0m	CM	12		
B7.2	Ditto in hard material depth not exceeding 1.0m	CM	9		
B7.3	Reinforced concrete grade 25/20 to slabs and ring beam	CM	4		
B7.4	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished d on one side	M	120		
B7.5	High Yield tensile steel reinforcement to concrete Diameter 8-16	KG	2000		
	Sub total				
B7.6	Supply and placement/ fitting of the following to construct galleries;				
B7.7	Supply material and construct vertical offtake system as per the drawing	Ls	1		
B7.8	160mm diameter HDPE PN16 water collection pipes	LM	50		
B7.9	160mm Butt/Electro Fussed End Caps	No	6		
B7.1	160mm Compression Blanking plugs	No	6		
B7.11	Back fill pipe trenches	CM	150		
	Sub total				
	Allow for provision and fitting of:				
B7.12	600x 600mm lockable plastic HG manhole cover	No	1		

B7.13	Air vent assemblies made of 2 x50mm Elbows, 1 x 50mm barrel nipple, 50mm piece of pipe 300mm long and pieces of coffee tray and mosquito gauze wires; fitted to the well roof slab	Sets	1		
B7.14	Internal access foot rests 500mm apart all down the well walls, made of D 16 reinforcement bars	No	280		
B7.15	300mm long, 150mm diameter pipe fitted through roof slab next to lockable manhole cover for pump insertion and removal and provided with a 152mm standard Borehole Cap	No	1		
B7.16	Allow for land scaping around completed shallow sump well	Item	1		
	Sub total				
	TOTAL FOR OFFTAKE SYSTEM AND SUMP WELL CARRIED TO MAIN SUMMARY				

BILL 8: INSTALLATION OF A SOLAR PUMPING SYSTEM

B8.1	Dayliff DS 14/7 2.2KW Pump c/w Motor	No	1		
B8.2	JA Monocrystalline PV Modules 415	No	10		
B8.3	Grundfos RSI003 3kw pump controller	No	1		
B8.4	PV disconnect switch	No	1		
B8.5	Wellprobe sensor	No	1		
	Supply and installation of Cables and accessories				
B8.6	4mm ² 1-submersible cable	M	10		
B8.7	2.5 mm ² twin flat cable for solar wiring	M	30		
B8.8	1.5mm ² 2-core U/G cable	No	25		
B8.9	earthrod with clamp	No	1		

B810	Electrode cable	M	10		
B8.11	Adaptor box 4''x4''x3''	No.	1		
B8.12	Install a manual change over swith to allow hybrid system including Londex well sensor cable- brown and black with pencil electrodes	No.	1		
B8.13	Submersible cable splicing joint	No.	1		
B8.14	2'' x 6'' Borehole Cover c/w Sundries	No.	1		
B8.15	25mm Airline pipes	No.	2		
B8.16	2.5mm ² x 2 Core U/G Cable	M	10		
B8.17	Supply and 2'' Install water meter (Kent) as Sensus or equivalent, one non-return valve and all other assorted fittings necessary for testing and commissioning.	No.	1		
B8.18	Other Installation accessories and connections	No.	1		
	Solar Structure and accessories				
B8.19	Supply and installation of heavy duty 3m long 2'' P.E pipe drop pipes as Dayliff drop pipes or approved equivalent, and necessary fittings and connection to the pump to deliver water to the elevated tank- offering reduced friction for increased operating efficiency, corrosion resistance, light weight and durability from the borehole cap to the delivery tank	No	2		
B8.20	Design as per radiations day angles, Fabrication and installation of solar support structure for the specified solar pannels. Rate to include for system testing. Use H- Beams cross section 100x100mm with 75x75x6mm ties and 50mmx50mmx6mm angle sections support to 38mmx6mm flat bars to hold pannels tight into position. All joints braced. Height of structure 5m above ground	Item	1		
B8.21	Supply and Installation and testing of 1No. Chlorination dosers and supply of 2T chlorine chemicals(170 lit chemical tank, dosing pump, 125w 12v solar panel, 100ah 12v sealed solar battery, Izzy 350w 12v dc inverter and Steca 20A	Item	1		

	charge controller)				
B8.22	Transport, Installation, testing and commissioning		1		
	TOTAL FOR SOLAR PUMPING SYSTEM CARRIED TO MAIN SUMMARY				

3. REHABILITATION OF UMUR WATER PAN

BILL 1: PERIMTER FENCE CONSTRUCTION					
B1.1	PERIMTER FENCE CONSTRUCTION	UNIT	QTY	RATE	AMOUNT
B1.1.2	Provide and install in 0.6"deep holes and concrete surround, 3.0m high 150 by 150 mm precast concrete fencing post @ 3000mm spacing including strainer post to the perimeter of the pan impoundment area 12 braces.	Nr	320		
B1.1.3	Provide and install Chain Link, 2mm thick, 50mm mesh size in 18m Roll (2.5 m Height) Heavy Gauge to	M	600		
B1.1.4	Barbed wire Ngombe Gauge 14 600m perimeter 5 strands.	M	3000		
B1.1.5	Fabricate, deliver and install double leaf steel gate 2500 mm high X 4000 mm wide; of equal leaves each 2000 mm hinged on concrete columns	Nr	1		
	Subtotal fencing				
B1.2	BRANDING & PROJECT SIGNPOST				
B1.2.1	Supply, Erect and label project signpost as directed by the Engineer	Item			
	sub total branding				
BILL 2: CONSTRUCTION OF 2 NO. 10M LONG CATTLE TROUGH(S)					
	Excavations				
B2.1	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m ²	61		
B2.2	Excavate for foundation strip commencing at stripped levels depth not exceeding 1.50m deep	m ³	6		
B2.3	Extra-over for excavation in hard rock	m ³	1		
B2.4	Remove surplus excavated material from site	m ³	4		
B2.5	Well rammed backfilling of preselected excavated materials in foundations	m ³	5		
	Sub-Total 1 : Excavations				

	Superstructure				
B2.6	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	11		
B2.7	Treat hardcore surface with approved Dagnet FT' anti-termite chemical treatment.	m ²	11		
	Concrete work				
B2.8	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B2.9	50mm blinding layer under foundations	m ³	1		
B2.1	50mm blinding layer on hardcore surfaces	m ³	4		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.11	Strip foundation	m ³	3		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.12	100mm thick reinforced floor	m ³	1		
B2.13	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	2		
	Reinforcement				
B2.14	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	72		
B2.15	High tensile mild steel reinforcement bars in assorted sizes	kg	400		
	Sawn formwork				
B2.16	Formwork to sides of foundation strip girth 150-225mm	m	41		

B2.17	Formwork to edges of floor slab girth not exceeding 75mm	m	21		
	Walling				
B2.18	150 Thick solid concrete block walling	m ²	5.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B2.19	15mm thick plaster to internal side of wall with water proof cement	m ²	20		
B2.2	12mm thick plaster to external side of wall	m ²	7		
B2.21	15mm thick plaster to floor finishes with water proof cement	m ²	8		
	Sub-Total 2 Superstructure				
	Galvanised mild steel pipes Class B medium thickness. Including jointing fittings and fixed as described				
B2.22	50 mm Diameter inlet pipe chased through concrete wall 200 mm long including fittings and stop cork	No	2		
B2.23	50mm diameter PVC draw off pipe 300mm long with and including a gate valve	No	1		
	Sub-total 3 Fixtures				
	Summary Costs				
	Sub-Total 1 : Excavations				
	Sub-Total 2 Superstructure				
	Sub-total 3 Fixtures				
	Total for 1No. Trough		1		
	TOTAL FOR 2No. TROUGH CARRIED TO MAIN SUMMARY		2		
BILL NO.3: CONSTRUCTION OF 1No. YARD TAP					
	SITE CLEARANCE AND SETTING OUT				
B3.1	Clear site of all bushes, shrubs, etc and dispose as directed by the Engineer	M ²	4		
	EXCAVATION AND BACKFILLING				
	Top soil				

B3.2	Rates to include removal of top vegetable soil average 250mm deep and dispose as directed by the Engineer.	M ²	4		
	HARDCORE				
B3.3	Well watered hard core packing in layers 150mm thick to make up levels average 300mm deep.	M ³	0.5		
B3.4	50mm blinding to hardcore bed surfaces in quarry dust/murram or equal and approved.	M ²	1		
	DPM AND DPC				
B3.6	1000gauge polythene in dpm on blinded surfaces.	M ²	2		
	SAWN FORMWORK				
B3.6	To vertical edges of floor slab 75 - 150 mm high.	M	4		
	REINFORCEMENT				
B3.8	B.R.C mesh REF no 65 to concrete base/floor slab and drainage grooves	M ²	1		
	CONCRETE WORKS IN SUBSTRUCTURE				
	Rates to include providing and placing the following concrete mixes including all form-work.				
	Concrete Mix 1:2:4				
B3.9	Ditto in 100mm concrete base slab including drainage grooves, and apron	M ²	0.5		
	Masonry Walling				
B3.10	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished on one side. Rate to included mild all reinforcement at every course	M ²	1		
	FINISHES				
B3.11	25mm thick sand cement lime plaster to external surfaces.	M ²	2		
B3.12	25mm thick sand cement lime plaster to floor surface trowel finished	M ²	1		
	PIPE WORK AND FITTINGS				
	Rates include supplying of pipe fittings including all jointing 'accessories,' handling, fixing, jointing and testing to the fetching bay. Rates also to include cutting and joining pipes.				

B3.13	110mm dia. waste pipe to be laid between the gulley trap of the fetching area and the soak pit.	M	6		
B3.14	25mm dia. GI pipe class C to be connected to the distribution main	M	8		
	GI Pipe Fittings (Rates to include all connections)				
B3.15	25mm diameter Gate valve	No.	1		
B3.16	25mm diameter Heavy duty water taps(Peggler)	No.	2		
B3.16	25mm diameter Union	No.	1		
B3.18	25mm diameter nipple	No.	2		
B3.19	25mm dia.1m long stand pipe	No.	2		
B3.20	25mm diameter 90o bend/elbow	No.	4		
B3.21	25mm diameter Coupler/Socket	No.	2		
B3.22	25mm diameter water meter	No.	1		
	CHAMBERS				
B3.23	Masonry gulley trap chamber size 1000 x 1000 x 1000mm high with 100mm thick sides and rebated top edge for and including including 600 x 600 x 50mm thick precast concrete cover including bedding UPVC gulley, dishing base of gulley, all necessary formwork, excavation and disposal. As per the drawings.	LS	1		
B3.24	Masonry soak away pit size 1200 x1200 x 1200mm deep with concrete cover as per the drawing. Rates to include 200mm thick granular filled layer, excavation, all necessary formwork and disposal of surplus materials.	No.	1		
	TOTAL FOR 1 STAND TAPS CARRIED TO MAIN SUMMARY				
BILL 4: INSTALLATION OF A 300M PIPELINE EXTENSION					
B4.1	Allow for excavating and backfilling of pipeline routes for depth not exceeding 0.9m for pipeline reticulation system from the sump well to the 10,000Lts PVC tank placed on	M	300		

	1.5m Masonry platform and to to the yard tap and troughs.				
B4.2	Purchase , supply and laying of 50 mm (2 inches) HDPE PN10 the rate also include	M	300		
B4.3	Construction of 2 masonry lockable inspection chambers at troughs and the draw off point 600mm*600mm*1000mm	item	2		
B4.4	Pipes and fitting				
	Provide, lay, joint and test the following fittings. Rates to include for all jointly materials, cutting wastage. All fittings to be PN10 Rating				
B4.5	50mm (2 inches) water kent meter	Pcs	1		
B4.6	sockets 2 inch GI	Pcs	10		
B4.7	50mm (2 inches) GI gate valves	Pcs	3		
B4.8	50mm (2 Inches) tee	Pcs	4		
B4.9	50mm (2 inches) -25mm Inch GI sockets reducer	Pcs	2		
B4.1	50mm (2 inches) GI Elbow	Pcs	5		
B4.11	Other installation sundries , thread tapes, tangent glue	Item	1		

	TOTAL PIPELINE CARRIED TO MAIN SUMMARY				
--	---	--	--	--	--

Bill No5: INSTALLATION OF 10,000L UPVC TANK AND CONSTRUCTION OF A 1.2M MASONRY PLATFORM					
B5.1	Supply kentainer tank or its equivalent of capacity 10,000ltrs. Rate to include transport to site and overheads	No	1		
	Construction Masonry r platform				
B5.2	Clear of all ushes and shrus and remove deris from tank site	SM	25		
B5.3	Excavation 3500mm x 3500mm for contruction of base as shown in the drawing	M ³	3.7		
B5.4	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	50		
	Concrete work				
B5.5	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B5.6	50mm blinding layer under foundations	m ³	6.12 5		
B5.7	50mm blinding layer on hardcore surfaces	m ³	6.12 5		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.8	Strip foundation	m ³	2		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.9	100mm thick reinforced floor	m ³	2		
B5.1	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	1.5		

	Reinforcement				
B5.11	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	12.25		
B5.12	High tensile mild steel reinforcement bars in assorted sizes	kg	500		
	Sawn formwork				
B5.13	Formwork to sides of foundation strip girth 150-225mm	m	14		
B5.14	Formwork to edges of floor slab girth not exceeding 75mm	m	20		
	Walling				
B5.15	150 Thick solid concrete block walling	m ²	8.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B5.16	15mm thick plaster to internal side of wall with water proof cement	m ²	16.8		
B5.17	12mm thick plaster to external side of wall	m ²	15		
B5.18	15mm thick plaster to floor finishes with water proof cement	m ²	12.25		
	Pipe works(Rate include installation)				
B5.19	Inlet pipe of PPR 50mm DN	M	12		
B5.2	Fittings and Appurtenances				
B5.21	2 inch GI Elbow	No	5		
B5.22	2 inch GI long nipple	No	2		
B5.23	2 inch GI back nuts	No	4		
B5.24	2inch gate valve Peglar	No	1		
B5.25	2 inch GI sockets	No	5		
B5.26	Other installation sundries including 5 thread tapes, 1 tangent glue	item	1		
B5.27	Construction of a masonry lockable inspection chambers at the tank base 1000mm*1000mm*1000mm	No	1		
B5.28	Provide material to construct shade as shown in the drawing	item	1		

	TOTAL UPVC TANK ON MASONRY PLATFORM CARRIED TO MAIN SUMMARY				
BILL 6: DESILTING OF WATER PAN					
B6.1	PRELIMINARIES				
B6.1.1	Mobilization and Demobilization of plant to and from project site	LS	1		
B6.1.2	Allow for Access Road provision to the site before and after construction works; rate to include clearing site of all trees, bushes, shrubs, concrete, etc and dispose as specified by the Engineer	LS	1		
	<u>Sub Total 1: Preliminaries</u>	-	-		
B6.2	EXCAVATION				
B6.2.1	Bulk excavations shall include for strutting. Shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means				
B6.2.2	Excavate silt soil to create a pan of external size 102 mx85mx3m, with side slopes of 1:2.5 and cart away to embankment. Do not desilt beyond 1.2m	m ³	45000		
B6.2.3	Disposal of excavated material to distance not away 2km	m ³	45000		
	Sub total 2: Excavations	-	-		
		-	-		
B6.3	CONSTRUCTION OF SILT TRAP/COLLECTOR CHANNELS				
B6.3.1	Excavate normal soil to create the silt trap as per drawing and cart away to embankment (35 m x 25m x 3.0 m)	M ³	1805		
B6.3.2	Construct concrete sill (mix 1:2:4) at the inlet to the outflow channel	M ³	5		
B6.3.3	Provide riprap protection edges silt trap walls and pan inlet walls and outflow channel as shown in drawings to include joining cement screed	M ²	340		
-	Sub Total 3: Silt trap	-	-		
B6.4	CONSTRUCTION OF INLET & OUTFLOW CHANNELS				

B6.4.1	Excavate in normal soil to create the inflow and outflow channel as per the drawings and cart away to spoil	M ³	350		
	Sub total 4 Inlet and outlet				
BILL NO 7: INFILTRATION GALLERY AND WELL CONSTRUCTION					
	INFILTRATION GALLERY AND WELL				
B7.1	Excavation for disposal below reservoir level to depth not exceeding 1.0m	CM	12		
B7.2	Ditto in hard material depth not exceeding 1.0m	CM	9		
B7.3	Reinforced concrete grade 25/20 to slabs and ring beam	CM	4		
B7.4	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished d on one side	M	120		
B7.5	High Yield tensile steel reinforcement to concrete Diameter 8-16	KG	2000		
	Sub total				
B7.6	Supply and placement/ fitting of the following to construct galleries;				
B7.7	Supply material and construct vertical offtake system as per the drawing	Ls	1		
B7.8	160mm diameter HDPE PN16 water collection pipes	LM	50		
B7.9	160mm Butt/Electro Fussed End Caps	No	6		
B7.1	160mm Compression Blanking plugs	No	6		
B7.11	Back fill pipe trenches	CM	150		
	Sub total				

	Allow for provision and fitting of:				
B7.12	600x 600mm lockable plastic HG manhole cover	No	1		
B7.13	Air vent assemblies made of 2 x50mm Elbows, 1 x 50mm barrel nipple, 50mm piece of pipe 300mm long and pieces of coffee tray and mosquito gauze wires; fitted to the well roof slab	Sets	1		
B7.14	Internal access foot rests 500mm apart all down the well walls, made of D 16 reinforcement bars	No	280		
B7.15	300mm long, 150mm diameter pipe fitted through roof slab next to lockable manhole cover for pump insertion and removal and provided with a 152mm standard Borehole Cap	No	1		
B7.16	Allow for land scaping around completed shallow sump well	Item	1		
	Sub total				
	TOTAL FOR OFFTAKE SYSTEM AND SUMP WELL CARRIED TO MAIN SUMMARY				

BILL 8: INSTALLATION OF A SOLAR PUMPING SYSTEM

B8.1	Dayliff DS 14/7 2.2KW Pump c/w Motor	No	1		
B8.2	JA Monocrystalline PV Modules 415	No	10		
B8.3	Grundfos RSI003 3kw pump controller	No	1		
B8.4	PV disconnect switch	No	1		
B8.5	Wellprobe sensor	No	1		
	Supply and installation of Cables and accessories				
B8.6	4mm ² 1-submersible cable	M	10		

B8.7	2.5 mm ² twin flat cable for solar wiring	M	30		
B8.8	1.5mm ² 2-core U/G cable	No	25		
B8.9	earthrod with clamp	No	1		
B8.10	Electrode cable	m	10		
B8.11	Adaptor box 4''x4''x3''	No.	1		
B8.12	Install a manual change over switch to allow hybrid system including Londex well sensor cable- brown and black with pencil electrodes	No.	1		
B8.13	Submersible cable splicing joint	No.	1		
B8.14	2" x 6" Borehole Cover c/w Sundries	No.	1		
B8.15	25mm Airline pipes	No.	2		
B8.16	2.5mm ² x 2 Core U/G Cable	m	10		
B8.17	Supply and 2'' Install water meter (Kent) as Sensus or equivalent, one non-return valve and all other assorted fittings necessary for testing and commissioning.	No.	1		
B8.18	Other Installation accessories and connections	No.	1		
	Solar Structure and accessories				
B8.19	Supply and installation of heavy duty 3m long 2'' P.E pipe drop pipes as Dayliff drop pipes or approved equivalent, and necessary fittings and connection to the pump to deliver water to the elevated tank- offering reduced friction for increased operating efficiency, corrosion resistance, light weight and durability from the borehole cap to the delivery tank	No	2		
B8.20	Design as per radiations day angles, Fabrication and installation of solar support structure for the specified solar pannels. Rate to include for system testing. Use H- Beams cross section 100x100mm with 75x75x6mm ties and 50mmx50mmx6mm angle sections support to 38mmx6mm flat bars to hold pannels tight into position. All joints braced. Height of structure 5m above	Item	1		

	ground				
B8.21	Supply and Installation and testing of 1No. Chlorination dosers and supply of 2T chlorine chemicals(170 lit chemical tank, dosing pump, 125w 12v solar panel, 100ah 12v sealed solar battery, Izzy 350w 12v dc inverter and Steca 20A charge controller)	Item	1		
B8.22	Transport, Installation, testing and commissioning		1		
	TOTAL FOR SOLAR PUMPING SYSTEM CARRIED TO MAIN SUMMARY				

4. REHABILITATION OF HARWALE WATER PAN

BILL 1: PERIMTER FENCE CONSTRUCTION					
B1.1	PERIMTER FENCE CONSTRUCTION	UNIT	QTY	RATE	AMOUNT
B1.1.2	Provide and install in 0.6"deep holes and concrete surround, 3.0m high 150 by 150 mm precast concrete fencing post @ 3000mm spacing including strainer post to the perimeter of the pan impoundment area 12 braces.	Nr	320		
B1.1.3	Provide and install Chain Link, 2mm thick, 50mm mesh size in 18m Roll (2.5 m Height) Heavy Gauge to	M	600		
B1.1.4	Barbed wire Ngombe Gauge 14 600m perimeter 5 strands.	M	3000		
B1.1.5	Fabricate, deliver and install double leaf steel gate 2500 mm high X 4000 mm wide; of equal leaves each 2000 mm hinged on concrete columns	Nr	1		
	Subtotal fencing				
B1.2	BRANDING & PROJECT SIGNPOST				
B1.2.1	Supply, Erect and label project signpost as directed by the Engineer	Item			
	sub total branding				
BILL 2: CONSTRUCTION OF 2 NO. 10M LONG CATTLE TROUGH(S)					
	Excavations				
B2.1	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m ²	61		
B2.2	Excavate for foundation strip commencing at stripped levels depth not exceeding 1.50m deep	m ³	6		
B2.3	Extra-over for excavation in hard rock	m ³	1		

B2.4	Remove surplus excavated material from site	m ³	4		
B2.5	Well rammed backfilling of preselected excavated materials in foundations	m ³	5		
Sub-Total 1 : Excavations					
Superstructure					
B2.6	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	11		
B2.7	Treat hardcore surface with approved Dragnet FT' anti-termite chemical treatment.	m ²	11		
Concrete work					
B2.8	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B2.9	50mm blinding layer under foundations	m ³	1		
B2.1	50mm blinding layer on hardcore surfaces	m ³	4		
Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:					
B2.11	Strip foundation	m ³	3		
Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:					
B2.12	100mm thick reinforced floor	m ³	1		
B2.13	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	2		
Reinforcement					
B2.14	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	72		

B2.15	High tensile mild steel reinforcement bars in assorted sizes	kg	400		
	Sawn formwork				
B2.16	Formwork to sides of foundation strip girth 150-225mm	m	41		
B2.17	Formwork to edges of floor slab girth not exceeding 75mm	m	21		
	Walling				
B2.18	150 Thick solid concrete block walling	m ²	5.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B2.19	15mm thick plaster to internal side of wall with water proof cement	m ²	20		
B2.2	12mm thick plaster to external side of wall	m ²	7		
B2.21	15mm thick plaster to floor finishes with water proof cement	m ²	8		
	Sub-Total 2 Superstructure				
	Galvanised mild steel pipes Class B medium thickness. Including jointing fittings and fixed as described				
B2.22	50 mm Diameter inlet pipe chased through concrete wall 200 mm long including fittings and stop cork	No	2		
B2.23	50mm diameter PVC draw off pipe 300mm long with and including a gate valve	No	1		
	Sub-total 3 Fixtures				
	Summary Costs				
	Sub-Total 1 : Excavations				
	Sub-Total 2 Superstructure				
	Sub-total 3 Fixtures				
	Total for 1No. Trough		1		
	TOTAL FOR 2No. TROUGH CARRIED TO MAIN SUMMARY		2		
BILL NO.3: CONSTRUCTION OF 1No. YARD TAP					

	SITE CLEARANCE AND SETTING OUT				
B3.1	Clear site of all bushes, shrubs, etc and dispose as directed by the Engineer	M ²	4		
	EXCAVATION AND BACKFILLING				
	Top soil				
B3.2	Rates to include removal of top vegetable soil average 250mm deep and dispose as directed by the Engineer.	M ²	4		
	HARDCORE				
B3.3	Well watered hard core packing in layers 150mm thick to make up levels average 300mm deep.	M ³	0.5		
B3.4	50mm blinding to hardcore bed surfaces in quarry dust/murram or equal and approved.	M ²	1		
	DPM AND DPC				
B3.6	1000gauge polythene in dpm on blinded surfaces.	M ²	2		
	SAWN FORMWORK				
B3.6	To vertical edges of floor slab 75 - 150 mm high.	M	4		
	REINFORCEMENT				
B3.8	B.R.C mesh REF no 65 to concrete base/floor slab and drainage grooves	M ²	1		
	CONCRETE WORKS IN SUBSTRUCTURE				
	Rates to include providing and placing the following concrete mixes including all form-work.				
	Concrete Mix 1:2:4				
B3.9	Ditto in 100mm concrete base slab including drainage grooves, and apron	M ²	0.5		
	Masonry Walling				
B3.10	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished on one side. Rate to included mild all reinforcement at every course	M ²	1		
	FINISHES				
B3.11	25mm thick sand cement lime plaster to external surfaces.	M ²	2		
B3.12	25mm thick sand cement lime plaster to floor surface trowel finished	M ²	1		

	PIPE WORK AND FITTINGS				
	Rates include supplying of pipe fittings including all jointing 'accessories,' handling, fixing, jointing and testing to the fetching bay. Rates also to include cutting and joining pipes.				
B3.13	110mm dia. waste pipe to be laid between the gulley trap of the fetching area and the soak pit.	M	6		
B3.14	25mm dia. GI pipe class C to be connected to the distribution main	M	8		
	GI Pipe Fittings (Rates to include all connections)				
B3.15	25mm diameter Gate valve	No.	1		
B3.16	25mm diameter Heavy duty water taps(Peggler)	No.	2		
B3.16	25mm diameter Union	No.	1		
B3.18	25mm diameter nipple	No.	2		
B3.19	25mm dia.1m long stand pipe	No.	2		
B3.20	25mm diameter 90o bend/elbow	No.	4		
B3.21	25mm diameter Coupler/Socket	No.	2		
B3.22	25mm diameter water meter	No.	1		
	CHAMBERS				
B3.23	Masonry gulley trap chamber size 1000 x 1000 x 1000mm high with 100mm thick sides and rebated top edge for and including including 600 x 600 x 50mm thick precast concrete cover including bedding UPVC gulley, dishing base of gulley, all necessary formwork, excavation and disposal. As per the drawings.	LS	1		
B3.24	Masonry soak away pit size 1200 x1200 x 1200mm deep with concrete cover as per the drawing. Rates to include 200mm thick granular filled layer, excavation, all necessary formwork and disposal of surplus materials.	No.	1		
	TOTAL FOR 1 STAND TAPS CARRIED TO MAIN SUMMARY				

BILL 4: INSTALLATION OF A 300M PIPELINE EXTENSION

B4.1	Allow for excavating and backfilling of pipeline routes for depth not exceeding 0.9m for pipeline reticulation system from the sump well to the 10,000Lts PVC tank placed on 1.5m Masonry platform and to to the yard tap and toughs.	M	300		
B4.2	Purchase , supply and laying of 50 mm (2 inches) HDPE PN10 the rate also include	M	300		
B4.3	Construction of 2 masonry lockable inspection chambers at troughs and the draw off point 600mm*600mm*1000mm	item	2		
B4.4	Pipes and fitting				
	Provide, lay, joint and test the following fittings. Rates to include for all jointly materials, cutting wastage. All fittings to be PN10 Rating				
B4.5	50mm (2 inches) water kent meter	Pcs	1		
B4.6	sockets 2 inch GI	Pcs	10		
B4.7	50mm (2 inches)GI gate valves	Pcs	3		
B4.8	50mm (2 Inches) tee	Pcs	4		
B4.9	50mm (2 inches) -25mm Inch GI sockets reducer	Pcs	2		
B4.1	50mm (2 inches) GI Elbow	Pcs	5		

B4.11	Other installation sundries , thread tapes, tangent glue	Item	1		
	TOTAL PIPELINE CARRIED TO MAIN SUMMARY				

Bill No5: INSTALLATION OF 10,000L UPVC TANK AND CONSTRUCTION OF A 1.2M MASONRY PLATFORM					
B5.1	Supply kentainer tank or its equivalent of capacity 10,000ltrs. Rate to include transport to site and overheads	No	1		
	Construction Masonry r platform				
B5.2	Clear of all ushes and shrus and remove deris from tank site	SM	25		
B5.3	Excavation 3500mm x 3500mm for contruction of base as shown in the drawing	M ³	3.7		
B5.4	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	50		
	Concrete work				
B5.5	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B5.6	50mm blinding layer under foundations	m ³	6.12 5		
B5.7	50mm blinding layer on hardcore surfaces	m ³	6.12 5		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.8	Strip foundation	m ³	2		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.9	100mm thick reinforced floor	m ³	2		

B5.1	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	1.5		
	Reinforcement				
B5.11	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	12.25		
B5.12	High tensile mild steel reinforcement bars in assorted sizes	kg	500		
	Sawn formwork				
B5.13	Formwork to sides of foundation strip girth 150-225mm	m	14		
B5.14	Formwork to edges of floor slab girth not exceeding 75mm	m	20		
	Walling				
B5.15	150 Thick solid concrete block walling	m ²	8.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B5.16	15mm thick plaster to internal side of wall with water proof cement	m ²	16.8		
B5.17	12mm thick plaster to external side of wall	m ²	15		
B5.18	15mm thick plaster to floor finishes with water proof cement	m ²	12.25		
	Pipe works(Rate include installation)				
B5.19	Inlet pipe of PPR 50mm DN	M	12		
B5.2	Fittings and Appurtenances				
B5.21	2 inch GI Elbow	No	5		
B5.22	2 inch GI long nipple	No	2		
B5.23	2 inch GI back nuts	No	4		
B5.24	2inch gate valve Peglar	No	1		
B5.25	2 inch GI sockets	No	5		
B5.26	Other installation sundries including 5 thread tapes, 1tangent glue	item	1		
B5.27	Construction of a masonry lockable inspection chambers at the tank base 1000mm*1000mm*1000mm	No	1		

B5.28	Provide material to construct shade as shown in the drawing	item	1		
	TOTAL UPVC TANK ON MASONRY PLATFORM CARRIED TO MAIN SUMMARY				
BILL 6: DESILTING OF WATER PAN					
B6.1	PRELIMINARIES				
B6.1.1	Mobilization and Demobilization of plant to and from project site	LS	1		
B6.1.2	Allow for Access Road provision to the site before and after construction works; rate to include clearing site of all trees, bushes, shrubs, concrete, etc and dispose as specified by the Engineer	LS	1		
	<u>Sub Total 1: Preliminaries</u>	-	-		
B6.2	EXCAVATION				
B6.2.1	Bulk excavations shall include for strutting, Shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means				
B6.2.2	Excavate silt soil to create a pan of external size 102 mx85mx3m, with side slopes of 1:2.5 and cart away to embankment. Do not desilt beyond 1.2m	m ³	40,000		
B6.2.3	Disposal of excavated material to distance not away 2km	m ³	40,000		
	Sub total 2: Excavations	-	-		
		-	-		
B6.3	CONSTRUCTION OF SILT TRAP/COLLECTOR CHANNELS				
B6.3.1	Excavate normal soil to create the silt trap as per drawing and cart away to embankment (35 m x 25m x 3.0 m)	M ³	1805		
B6.3.2	Construct concrete sill (mix 1:2:4) at the inlet to the outflow channel	M ³	5		
B6.3.3	Provide riprap protection edges silt trap walls and pan inlet walls and outflow channel as shown in drawings to include joining cement screed	M ²	340		

-	Sub Total 3: Silt trap	-	-		
B6.4	CONSTRUCTION OF INLET & OUTFLOW CHANNELS				
B6.4.1	Excavate in normal soil to create the inflow and outflow channel as per the drawings and cart away to spoil	M ³	350		
	Sub total 4 Inlet and outlet				
BILL NO 7: INFILTRATION GALLERY AND WELL CONSTRUCTION					
	INFILTRATION GALLERY AND WELL				
B7.1	Excavation for disposal below reservoir level to depth not exceeding 1.0m	CM	12		
B7.2	Ditto in hard material depth not exceeding 1.0m	CM	9		
B7.3	Reinforced concrete grade 25/20 to slabs and ring beam	CM	4		
B7.4	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished d on one side	M	120		
B7.5	High Yield tensile steel reinforcement to concrete Diameter 8-16	KG	2000		
	Sub total				
B7.6	Supply and placement/ fitting of the following to construct galleries;				
B7.7	Supply material and construct vertical offtake system as per the drawing	Ls	1		
B7.8	160mm diameter HDPE PN16 water collection pipes	LM	50		
B7.9	160mm Butt/Electro Fussed End Caps	No	6		

B7.1	160mm Compression Blanking plugs	No	6		
B7.11	Back fill pipe trenches	CM	150		
	Sub total				
	Allow for provision and fitting of:				
B7.12	600x 600mm lockable plastic HG manhole cover	No	1		
B7.13	Air vent assemblies made of 2 x50mm Elbows, 1 x 50mm barrel nipple, 50mm piece of pipe 300mm long and pieces of coffee tray and mosquito gauze wires; fitted to the well roof slab	Sets	1		
B7.14	Internal access foot rests 500mm apart all down the well walls, made of D 16 reinforcement bars	No	280		
B7.15	300mm long, 150mm diameter pipe fitted through roof slab next to lockable manhole cover for pump insertion and removal and provided with a 152mm standard Borehole Cap	No	1		
B7.16	Allow for land scaping around completed shallow sump well	Item	1		
	Sub total				
	TOTAL FOR OFFTAKE SYSTEM AND SUMP WELL CARRIED TO MAIN SUMMARY				

BILL 8: INSTALLATION OF A SOLAR PUMPING SYSTEM

B8.1	Dayliff DS 14/7 2.2KW Pump c/w Motor	No	1		
B8.2	JA Monocrystalline PV Modules 415	No	10		
B8.3	Grundfos RSI003 3kw pump controller	No	1		
B8.4	PV disconnect switch	No	1		
B8.5	Wellprobe sensor	No	1		

	Supply and installation of Cables and accessories				
B8.6	4mm ² 1-submersible cable	M	10		
B8.7	2.5 mm ² twin flat cable for solar wiring	M	30		
B8.8	1.5mm ² 2-core U/G cable	No	25		
B8.9	earthrod with clamp	No	1		
B8.10	Electrode cable	m	10		
B8.11	Adaptor box 4''x4''x3''	No.	1		
B8.12	Install a manual change over switch to allow hybrid system including Londex well sensor cable- brown and black with pencil electrodes	No.	1		
B8.13	Submersible cable splicing joint	No.	1		
B8.14	2" x 6" Borehole Cover c/w Sundries	No.	1		
B8.15	25mm Airline pipes	No.	2		
B8.16	2.5mm ² x 2 Core U/G Cable	m	10		
B8.17	Supply and 2'' Install water meter (Kent) as Sensus or equivalent, one non-return valve and all other assorted fittings necessary for testing and commissioning.	No.	1		
B8.18	Other Installation accessories and connections	No.	1		
	Solar Structure and accessories				
B8.19	Supply and installation of heavy duty 3m long 2'' P.E pipe drop pipes as Dayliff drop pipes or approved equivalent, and necessary fittings and connection to the pump to deliver water to the elevated tank- offering reduced friction for increased operating efficiency, corrosion resistance, light weight and durability from the borehole cap to the delivery tank	No	2		
B8.20	Design as per radiations day angles, Fabrication and installation of solar support structure for the specified solar pannels. Rate to include for system testing. Use H- Beams cross section	Item	1		

	100x100mm with 75x75x6mm ties and 50mmx50mmx6mm angle sections support to 38mmx6mm flat bars to hold pannels tight into position. All joints braced. Height of structure 5m above ground				
B8.21	Supply and Installation and testing of 1No. Chlorination dosers and supply of 2T chlorine chemicals(170 lit chemical tank, dosing pump, 125w 12v solar panel, 100ah 12v sealed solar battery, Izzy 350w 12v dc inverter and Steca 20A charge controller)	Item	1		
B8.22	Transport, Installation, testing and commissioning		1		
	TOTAL FOR SOLAR PUMPING SYSTEM CARRIED TO MAIN SUMMARY				

5.REHABILITATION OF MALKAMARI - BURI WATER PAN

BILL 1: PERIMTER FENCE CONSTRUCTION					
B1.1	PERIMTER FENCE CONSTRUCTION	UNIT	QTY	RATE	AMOUNT
B1.1.2	Provide and install in 0.6"deep holes and concrete surround, 3.0m high 150 by 150 mm precast concrete fencing post @ 3000mm spacing including strainer post to the perimeter of the pan impoundment area 12 braces.	Nr	320		
B1.1.3	Provide and install Chain Link, 2mm thick, 50mm mesh size in 18m Roll (2.5 m Height) Heavy Gauge to	M	600		
B1.1.4	Barbed wire Ngombe Gauge 14 600m perimeter 5 strands.	M	3000		
B1.1.5	Fabricate, deliver and install double leaf steel gate 2500 mm high X 4000 mm wide; of equal leaves each 2000 mm hinged on concrete columns	Nr	1		
	Subtotal fencing				
B1.2	BRANDING & PROJECT SIGNPOST				
B1.2.1	Supply, Erect and label project signpost as directed by the Engineer	Item			
	sub total branding				

BILL 2: CONSTRUCTION OF 2 NO. 10M LONG CATTLE TROUGH(S)					
	Excavations				
B2.1	Prepare site by stripping top 150 mm of soil to remove all debris including sand (if any) from site and carting away spoil	m ²	61		
B2.2	Excavate for foundation strip commencing at stripped levels depth not exceeding 1.50m deep	m ³	6		
B2.3	Extra-over for excavation in hard rock	m ³	1		
B2.4	Remove surplus excavated material from site	m ³	4		
B2.5	Well rammed backfilling of preselected excavated materials in foundations	m ³	5		
	Sub-Total 1 : Excavations				
	Superstructure				
B2.6	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	11		
B2.7	Treat hardcore surface with approved Dagnet FT' anti-termite chemical treatment.	m ²	11		
	Concrete work				
B2.8	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B2.9	50mm blinding layer under foundations	m ³	1		
B2.1	50mm blinding layer on hardcore surfaces	m ³	4		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.11	Strip foundation	m ³	3		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B2.12	100mm thick reinforced floor	m ³	1		

B2.13	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	2		
	Reinforcement				
B2.14	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	72		
B2.15	High tensile mild steel reinforcement bars in assorted sizes	kg	400		
	Sawn formwork				
B2.16	Formwork to sides of foundation strip girth 150-225mm	m	41		
B2.17	Formwork to edges of floor slab girth not exceeding 75mm	m	21		
	Walling				
B2.18	150 Thick solid concrete block walling	m ²	5.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B2.19	15mm thick plaster to internal side of wall with water proof cement	m ²	20		
B2.2	12mm thick plaster to external side of wall	m ²	7		
B2.21	15mm thick plaster to floor finishes with water proof cement	m ²	8		
	Sub-Total 2 Superstructure				
	Galvanised mild steel pipes Class B medium thickness. Including jointing fittings and fixed as described				
B2.22	50 mm Diameter inlet pipe chased through concrete wall 200 mm long including fittings and stop cork	No	2		
B2.23	50mm diameter PVC draw off pipe 300mm long with and including a gate valve	No	1		

	Sub-total 3 Fixtures				
	Summary Costs				
	Sub-Total 1 : Excavations				
	Sub-Total 2 Superstructure				
	Sub-total 3 Fixtures				
	Total for 1No. Trough		1		
	TOTAL FOR 2No. TROUGH CARRIED TO MAIN SUMMARY		2		
BILL NO.3: CONSTRUCTION OF 1No. YARD TAP					
SITE CLEARANCE AND SETTING OUT					
B3.1	Clear site of all bushes, shrubs, etc and dispose as directed by the Engineer	M ²	4		
EXCAVATION AND BACKFILLING					
	Top soil				
B3.2	Rates to include removal of top vegetable soil average 250mm deep and dispose as directed by the Engineer.	M ²	4		
HARDCORE					
B3.3	Well watered hard core packing in layers 150mm thick to make up levels average 300mm deep.	M ³	0.5		
B3.4	50mm blinding to hardcore bed surfaces in quarry dust/murram or equal and approved.	M ²	1		
DPM AND DPC					
B3.6	1000gauge polythene in dpm on blinded surfaces.	M ²	2		
SAWN FORMWORK					
B3.6	To vertical edges of floor slab 75 - 150 mm high.	M	4		
REINFORCEMENT					
B3.8	B.R.C mesh REF no 65 to concrete base/floor slab and drainage grooves	M ²	1		
CONCRETE WORKS IN SUBSTRUCTURE					
	Rates to include providing and placing the following concrete mixes including all form-work.				
Concrete Mix 1:2:4					
B3.9	Ditto in 100mm concrete base slab including drainage grooves, and apron	M ²	0.5		
	Masonry Walling				

B3.10	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished on one side. Rate to included mild all reinforcement at every course	M ²	1		
	FINISHES				
B3.11	25mm thick sand cement lime plaster to external surfaces.	M ²	2		
B3.12	25mm thick sand cement lime plaster to floor surface trowel finished	M ²	1		
	PIPE WORK AND FITTINGS				
	Rates include supplying of pipe fittings including all jointing 'accessories,' handling, fixing, jointing and testing to the fetching bay. Rates also to include cutting and joining pipes.				
B3.13	110mm dia. waste pipe to be laid between the gulley trap of the fetching area and the soak pit.	M	6		
B3.14	25mm dia. GI pipe class C to be connected to the distribution main	M	8		
	GI Pipe Fittings (Rates to include all connections)				
B3.15	25mm diameter Gate valve	No.	1		
B3.16	25mm diameter Heavy duty water taps(Peggler)	No.	2		
B3.16	25mm diameter Union	No.	1		
B3.18	25mm diameter nipple	No.	2		
B3.19	25mm dia.1 m long stand pipe	No.	2		
B3.20	25mm diameter 90o bend/elbow	No.	4		
B3.21	25mm diameter Coupler/Socket	No.	2		
B3.22	25mm diameter water meter	No.	1		
	CHAMBERS				

B3.23	Masonry gulley trap chamber size 1000 x 1000 x 1000mm high with 100mm thick sides and rebated top edge for and including including 600 x 600 x 50mm thick precast concrete cover including bedding UPVC gulley, dishing base of gulley, all necessary formwork, excavation and disposal. As per the drawings.	LS	1		
B3.24	Masonry soak away pit size 1200 x1200 x 1200mm deep with concrete cover as per the drawing. Rates to include 200mm thick granular filled layer, excavation, all necessary formwork and disposal of surplus materials.	No.	1		
	TOTAL FOR 1 STAND TAPS CARRIED TO MAIN SUMMARY				
BILL 4: INSTALLATION OF A 300M PIPELINE EXTENSION					
B4.1	Allow for excavating and backfilling of pipeline routes for depth not exceeding 0.9m for pipeline reticulation system from the sump well to the 10,000Lts PVC tank placed on 1.5m Masonry platform and to to the yard tap and toughs.	M	300		
B4.2	Purchase , supply and laying of 50 mm (2 inches) HDPE PN10 the rate also include	M	300		
B4.3	Construction of 2 masonry lockable inspection chambers at troughs and the draw off point600mm*600mm*1000mm	item	2		
B4.4	Pipes and fitting				
	Provide, lay, joint and test the following fittings. Rates to include for all jointly materials, cutting wastage. All fittings to be PN10 Rating				
B4.5	50mm (2 inches) water kent meter	Pcs	1		

B4.6	sockets 2 inch GI	Pcs	10		
B4.7	50mm (2 inches)GI gate valves	Pcs	3		
B4.8	50mm (2 Inches) tee	Pcs	4		
B4.9	50mm (2 inches) -25mm Inch GI sockets reducer	Pcs	2		
B4.1	50mm (2 inches) GI Elbow	Pcs	5		
B4.11	Other installation sundries , thread tapes, tangent glue	Item	1		
	TOTAL PIPELINE CARRIED TO MAIN SUMMARY				

Bill No5: INSTALLATION OF 10,000L UPVC TANK AND CONSTRUCTION OF A 1.2M MASONRY PLATFORM					
B5.1	Supply kentainer tank or its equivalent of capacity 10,000ltrs. Rate to include transport to site and overheads	No	1		
	Construction Masonry platform				
B5.2	Clear of all ushes and shrus and remove deris from tank site	SM	25		
B5.3	Excavation 3500mm x 3500mm for contruction of base as shown in the drawing	M ³	3.7		
B5.4	300 mm thick approved hardcore filling spread, well rammed and compacted in 150mm layers to receive concrete surface bed to include 2m area wide around the trough	m ³	50		
	Concrete work				
B5.5	Mass Concrete class 15 (1:3:6) with 20mm thick maximum aggregate size in				
B5.6	50mm blinding layer under foundations	m ³	6.12 5		

B5.7	50mm blinding layer on hardcore surfaces	m ³	6.12 5		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.8	Strip foundation	m ³	2		
	Vibrated reinforced concrete class 25 (1:1.5:3) with 20mm maximum aggregate as described in:				
B5.9	100mm thick reinforced floor	m ³	2		
B5.1	75mm thick concrete benching all round the foundation and sloping at 1:100M as shown in the drawn or as directed by project Engineer.	m ³	1.5		
	Reinforcement				
B5.11	Mesh fabric reinforcement ref. No. A142 laid in floor slab with minimum 150 mm side allowance	m ²	12.2 5		
B5.12	High tensile mild steel reinforcement bars in assorted sizes	kg	500		
	Sawn formwork				
B5.13	Formwork to sides of foundation strip girth 150-225mm	m	14		
B5.14	Formwork to edges of floor slab girth not exceeding 75mm	m	20		
	Walling				
B5.15	150 Thick solid concrete block walling	m ²	8.4		
	Finishes				
	Cement and sand mortar (1:3) in:				
B5.16	15mm thick plaster to internal side of wall with water proof cement	m ²	16.8		
B5.17	12mm thick plaster to external side of wall	m ²	15		

B5.18	15mm thick plaster to floor finishes with water proof cement	m ²	12.25		
	Pipe works(Rate include installation)				
B5.19	Inlet pipe of PPR 50mm DN	M	12		
B5.2	Fittings and Appurtenances				
B5.21	2 inch GI Elbow	No	5		
B5.22	2 inch GI long nipple	No	2		
B5.23	2 inch GI back nuts	No	4		
B5.24	2inch gate valve Peglar	No	1		
B5.25	2 inch GI sockets	No	5		
B5.26	Other installation sundries including 5 thread tapes, 1 tangent glue	item	1		
B5.27	Construction of a masonry lockable inspection chambers at the tank base 1000mm*1000mm*1000mm	No	1		
B5.28	Provide material to construct shade as shown in the drawing	item	1		
	TOTAL UPVC TANK ON MASONRY PLATFORM CARRIED TO MAIN SUMMARY				

BILL 6: DESILTING OF WATER PAN

B6.1	PRELIMINARIES				
B6.1.1	Mobilization and Demobilization of plant to and from project site	LS	1		
B6.1.2	Allow for Access Road provision to the site before and after construction works; rate to include clearing site of all trees, bushes, shrubs, concrete, etc and dispose as specified by the Engineer	LS	1		
	<u>Sub Total 1: Preliminaries</u>	-	-		
B6.2	EXCAVATION				
B6.2.1	Bulk excavations shall include for strutting. Shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means				
B6.2.2	Excavate silt soil to create a pan of external size 102 mx85mx3m, with side slopes of 1:2.5 and cart away to embankment. Do not desilt beyond 1.2m	m ³	45000		
B6.2.3	Disposal of excavated material to distance not away 2km	m ³	45000		
	Sub total 2: Excavations	-	-		

		-	-		
B6.3	CONSTRUCTION OF SILT TRAP/COLLECTOR CHANNELS				
B6.3.1	Excavate normal soil to create the silt trap as per drawing and cart away to embankment (35 m x 25m x 3.0 m)	M ³	1805		
B6.3.2	Construct concrete sill (mix 1:2:4) at the inlet to the outflow channel	M ³	5		
B6.3.3	Provide riprap protection edges silt trap walls and pan inlet walls and outflow channel as shown in drawings to include joining cement screed	M ²	340		
-	Sub Total 3: Silt trap	-	-		
B6.4	CONSTRUCTION OF INLET & OUTFLOW CHANNELS				
B6.4.1	Excavate in normal soil to create the inflow and outflow channel as per the drawings and cart away to spoil	M ³	350		
	Sub total 4 Inlet and outlet				
BILL NO 7: INFILTRATION GALLERY AND WELL CONSTRUCTION					
	INFILTRATION GALLERY AND WELL				
B7.1	Excavation for disposal below reservoir level to depth not exceeding 1.0m	CM	12		
B7.2	Ditto in hard material depth not exceeding 1.0m	CM	9		
B7.3	Reinforced concrete grade 25/20 to slabs and ring beam	CM	4		
B7.4	150 x225X 450mm natural stone to walls to superstructures walling in 1:3 sand/cement mortar finished with steel finished d on one side	M	120		
B7.5	High Yield tensile steel reinforcement to concrete Diameter 8-16	KG	2000		
	Sub total				

B7.6	Supply and placement/ fitting of the following to construct galleries;				
B7.7	Supply material and construct vertical offtake system as per the drawing	Ls	1		
B7.8	160mm diameter HDPE PN16 water collection pipes	LM	50		
B7.9	160mm Butt/Electro Fused End Caps	No	6		
B7.1	160mm Compression Blanking plugs	No	6		
B7.11	Back fill pipe trenches	CM	150		
	Sub total				
	Allow for provision and fitting of:				
B7.12	600x 600mm lockable plastic HG manhole cover	No	1		
B7.13	Air vent assemblies made of 2 x50mm Elbows, 1 x 50mm barrel nipple, 50mm piece of pipe 300mm long and pieces of coffee tray and mosquito gauze wires; fitted to the well roof slab	Sets	1		
B7.14	Internal access foot rests 500mm apart all down the well walls, made of D 16 reinforcement bars	No	280		
B7.15	300mm long, 150mm diameter pipe fitted through roof slab next to lockable manhole cover for pump insertion and removal and provided with a 152mm standard Borehole Cap	No	1		
B7.16	Allow for land scaping around completed shallow sump well	Item	1		
	Sub total				

	TOTAL FOR OFFTAKE SYSTEM AND SUMP WELL CARRIED TO MAIN SUMMARY				
BILL 8: INSTALLATION OF A SOLAR PUMPING SYSTEM					
B8.1	Dayliff DS 14/7 2.2KW Pump c/w Motor	No	1		
B8.2	JA Monocrystalline PV Modules 415	No	10		
B8.3	Grundfos RSI003 3kw pump controller	No	1		
B8.4	PV disconnect switch	No	1		
B8.5	Wellprobe sensor	No	1		
	Supply and installation of Cables and accessories				
B8.6	4mm ² 1-submersible cable	M	10		
B8.7	2.5 mm ² twin flat cable for solar wiring	M	30		
B8.8	1.5mm ² 2-core U/G cable	No	25		
B8.9	earthrod with clamp	No	1		
B8.10	Electrode cable	m	10		
B8.11	Adaptor box 4''x4''x3''	No.	1		
B8.12	Install a manual change over switch to allow hybrid system including Londex well sensor cable- brown and black with pencil electrodes	No.	1		
B8.13	Submersible cable splicing joint	No.	1		
B8.14	2" x 6" Borehole Cover c/w Sundries	No.	1		
B8.15	25mm Airline pipes	No.	2		
B8.16	2.5mm ² x 2 Core U/G Cable	m	10		
B8.17	Supply and 2'' Install water meter (Kent) as Sensus or equivalent, one non-return valve and all other assorted fittings necessary for testing and commissioning.	No.	1		
B8.18	Other Installation accessories and connections	No.	1		

	Solar Structure and accessories				
B8.19	Supply and installation of heavy duty 3m long 2'' P.E pipe drop pipes as Dayliff drop pipes or approved equivalent, and necessary fittings and connection to the pump to deliver water to the elevated tank- offering reduced friction for increased operating efficiency, corrosion resistance, light weight and durability from the borehole cap to the delivery tank	No	2		
B8.20	Design as per radiations day angles, Fabrication and installation of solar support structure for the specified solar pannels. Rate to include for system testing. Use H- Beams cross section 100x100mm with 75x75x6mm ties and 50mmx50mmx6mm angle sections support to 38mmx6mm flat bars to hold pannels tight into position. All joints braced. Height of structure 5m above ground	Item	1		
B8.21	Supply and Installation and testing of 1No. Chlorination dosers and supply of 2T chlorine chemicals(170 lit chemical tank, dosing pump, 125w 12v solar panel, 100ah 12v sealed solar battery, Izzy 350w 12v dc inverter and Steca 20A charge controller)	Item	1		
B8.22	Transport, Installation, testing and commissioning		1		

SUMMARY

Summary price for the five sites;

SITE	AMOUNT (KSH)
<u>RACIDA/USAIDBHA-2024/GR00169-003/01</u> <u>HULLOW EARTHPAN</u>	
<u>RACIDA/USAIDBHA-2024/GR00169-003/02</u> <u>DARKALE TARAMA EARTHPAN</u>	
<u>RACIDA/USAIDBHA-2024/GR00169-003/03</u> <u>UMUR EARTHPAN</u>	
<u>RACIDA/USAIDBHA-2024/GR00169-003/04</u> <u>HARWALE EARTHPAN</u>	
<u>RACIDA/USAIDBHA-2024/GR00169-003/05</u> <u>MALKAMARI BURI</u>	

The site can be accessed through several all weather roads within the Mandera West

NOTE:

1. All Prices quoted shall include **VAT**

1. **Statement of Compliance**

- a) I confirm compliance of all clauses of the General Conditions, General Specifications and Particular Specifications in this tender.
- b) I confirm I have not made and will not make any payment to any person, who can be perceived as an inducement to win this tender.

Signed:*for and on behalf of the Tenderer*

Date:

Official Rubber Stamp:

WARRANTY

The equipment and accessories should have a warranty of at least 2 years, from date of installation for failures caused by faulty design, materials or workmanship. The Terms of Warranty should be provided in the product catalogue and brochures.

PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)

TENDER No. RACIDA/USAIDBHA-MDR2023/2024-003
The Procurement Officer,
Rural Agency for Community Development and Assistance – RACIDA
Email Address: procurement@racida.org
Mandera Office: Malkasuftu Road Next to Garanda Hotel or
Nairobi Office : Kinduruma Road, Top Plaza Ground Floor unit 9-12

Dear Sir,

WHEREAS(hereinafter called “the Contractor”) has undertaken, in pursuance of Contract No. dated to execute (hereinafter called “the Works”);

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Contractor, up to a total of: Kshs. (*amount of Guarantee in figures*) Kenya Shillings (*amount of Guarantee in words*), and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of Kenya Shillings (*amount of Guarantee in words*) as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change, addition or other modification of the terms of the Contract or of the Works to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any change, addition, or modification.

This guarantee shall be valid until the date of issue of the Certificate of Completion.

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank

Address

Date

TENDER QUESTIONNAIRE

Please fill in block letters.

1. Full names of Tenderer:

.....

2. Full address of Tenderer to which tender correspondence is to be sent
(unless an agent has been appointed below):

.....

3. Telephone number (s) of Tenderer:

.....

4. Telex/Fax Address of Tenderer:

.....

5. Name of Tenderer’s representative to be contacted on matters of the tender during the tender period:

.....

6. Details of Tenderer’s nominated agent (if any) to receive tender notices.
This is essential if the Tenderer does not have his registered address in Kenya (name, address, telephone, telex):

.....

.....

Signature of Tenderer

Make copy and deliver to:
The Procurement Officer,
Rural Agency for Community Development and Assistnce – RACIDA

Head Office Mandera

CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2(c) and (2d) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

Part 1 – General

Business Name

Location of business premises: Country/Town.....

Plot No..... Street/Road.....

Postal Address..... Tel No.....

Nature of Business.....

Current Trade Licence No..... Expiring date.....

Maximum value of business which you can handle at any time:
Kenya Shillings.....

Name of your bankers.....

Branch.....

Part 2 (a) – Sole Proprietor

Your name in full..... Age.....

Nationality..... Country of Origin.....

Citizenship details

Part 2 (b) – Partnership

Give details of partners as follows:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details</i>	<i>Shares</i>
1.
2.
3.
4.

Part 2(c) – Registered Company

Private or Public

State the nominal and issued capita of the company:

Nominal KShs.

Issued KShs.

Give details of all directors as follows:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details*</i>	<i>Shares</i>
1.
2.
3.
4.

Part 2(d) Interest in the Firm:

Is there any person/persons in the employment of Rural Agency for Community Development and Assistance WHO has interest in this firm? Yes/No(Delete as necessary)

I certify that the above information is correct.

.....
Title

.....
Signature

.....
Date

* Attach proof of citizenship

KEY PERSONNEL

Qualifications and experience of key personnel proposed for administration and execution of the Contract. (**Signed CVs and copies of certificates MUST be attach**)

POSITION	NAME	YEARS OF EXPERIENC (GENERAL)	YEARS OF EXPERIENCE IN PROPOSED POSITION
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

I certify that the above information is correct.

.....
Title

.....
Signature

.....
Date

SCHEDULE OF CONTRACTS COMPLETED IN THE LAST FIVE (3) YEARS

Work performed on works of a similar nature, complexity and volume over the last 3 years.
(Copies of Completion Certificates, Handing over Certificates or Final payment MUST be attached as proof).

PROJECT NAME	NAME OF CLIENT	TYPE OF WORK AND YEAR OF COMPLETION	VALUE OF CONTRACT (Kshs.)

I certify that the above works were successfully carried out and completed by ourselves.

.....
Title

.....
Signature

.....
Date

SCHEDULE OF ON-GOING PROJECTS

Details of on-going or committed projects, including expected completion date.
(Copies of letter of offer **MUST** be attached as proof).

PROJECT NAME	NAME OF CLIENT	CONTRACT SUM	% COMPLETED	COMPLETION DATE

I certify that the above works are currently being carried out by ourselves.

.....
Title

.....
Signature

.....
Date

FINANCIAL REPORTS FOR THE LAST TWO YEARS

(Balance sheets, Profits and Loss Statements, Auditor’s reports, etc.

List below and attach copies)

- 1. _____.
- 2. _____.
- 3. _____.
- 4. _____.
- 5. _____.
- 6. _____.
- 7. _____.
- 8. _____.
- 9. _____.
- 10. _____.

I certify that the above works information is correct.

.....
Title

.....
Signature

.....
Date

EVIDENCE OF FINANCIAL RESOURCES TO MEET QUALIFICATION REQUIREMENTS

(Cash in Hand, Lines of credit, etc. List below and attach copies of supportive documents.)

- 1. _____.
- 2. _____.
- 3. _____.
- 4. _____.
- 5. _____.
- 6. _____.
- 7. _____.
- 8. _____.
- 9. _____.
- 10. _____.

I certify that the above works information is correct.

.....
Title

.....
Signature

.....
Date

DECLARATION FORM

To

Date

The Tenderer i.e. _____ (*name and address*) Declare the following:

- a) Has not been debarred from participating in the public procurement.
- b) Has not been involved and will not be involved in corruption and fraudulent practices regarding public procurement

_____ Title

_____ Signature

_____ Date

(To be signed by authorized representative and officially stamped)

CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM
(FOR YOUTH, WOMEN & DISADVANTAGED GROUPS)

All Tenderers are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2 (c) whichever applies to your type of business. Tenderers are advised that it is a serious offence to give false information on this form.

Part 1 – General

Business Name.....

Location of business premises.....

Plot No.Street/ Road

Postal Address Postal Code

Tel No.....

Facsimile.....

Mobile and CDMA No.....

E-mail:.....

Nature of your business

Registration Certificate No.....

Maximum value of business which you can handle at any time KSh.....

Name of your BankersBranch... ..

*Names of Tenderer's contact person(s)

Designation/ capacity of the Tenderer's contact person(s)

Address, Tel, Fax and E-mail of the Tenderer's contact person(s)

.....

Part 2 (a) Sole Proprietor

Your name in full

Age..... NationalityCountry of origin

.....

Part 2 (b) Partnership

Give details of partners as follows: -

Names	Nationality	Age	Shares (%)
1.....			
2.....			
3.....			
4.....			
5.....			

Part 2 (c) Registered Groups

Give details of members as follows: -

Names	Nationality	Age	Gender	Shares (%)
1.....				
2.....				
3.....				
4.....				
5.....				

Part 2 (d) Registered Company

Private or Public

State the nominal and issued capital of company-

*Nominal in KSh.

*Total Issued KSh.

Give details of all directors as follows

Name	Nationality	Age	Shares (%)
1.....			
2.....			
3.....			
4.....			
5.....			

Name of duly authorized person to sign for and on behalf of the Tenderer

.....

Capacity of the duly authorized person.....

Signature of the duly authorized person.....

***NOTES TO THE TENDERERS ON THE QUESTIONNAIRE**

3. *Bidders shall attach their copies of the National Identity Card/ Passport*
2. *The address and contact person of the Tendered provided above shall at all times be used for purposes of this tender.*
3. *The details on this Form are essential and compulsory for all Tenderers. **Failure to provide all the information requested shall lead to the Tenderer's disqualification.***

TENDER SECURITY DECLARATION FORM
(FOR YOUTH, WOMEN & DISADVANTAGED GROUPS)

(The Bidder shall complete in this form in accordance with the instructions indicated)

Date:.....
(insert date (as day, month, year) of Bid Submission)

Tender No.....
(Insert number of bidding process)

To:

TENDER No. RACIDA/USAIDBHA-MDR2023/2024-003
The Procurement Officer,
Rural Agency for Community Development and Assistnce – RACIDA
Email Address: procurement@racida.org
Mandera Office: Malkasuftu Road Next to Garanda Hotel or
Nairobi Office : Kinduruma Road, Top Plaza Ground Floor unit 9-12

We, the undersigned declare that.

1. We understand that, according to your conditions, bids must be supported by a bid-securing declaration.
2. We accept that we will be automatically be suspended from being eligible for bidding in any contract with the purchaser for the period of the time of (insert the number of months or years) starting on (insert date), if we are in breach of our obligation(s) under the bid conditions, because we-
 - a. Have withdrawn our bid during the period of bid validity specified by us in the bidding data sheet: or
 - b. Having been notified of the acceptance of our bid by the purchaser during the period of bid validity,
 - i. Fail or refuse the contract, if required, or
 - ii. Fail or refuse to finish the performance security, in accordance with the ITT
3. We understand that this bid securing declaration shall expire if we are not the successful bidder, upon the earlier of
 - i. Our receipt of a copy of your notification of the name of the successful bidder; or
 - ii. Twenty-eight days after the expiration of our tender.

4. We understand that if we are a joint venture, the bid securing declaration must be in the name of the joint venture that submits the bid, and the joint venture has not been legally constituted at the time of bidding, the bid securing declaration shall be in the names of all future partners as named in the letter of intent.

Signed:.....
(insert signature of person whose name and capacity are shown)

in the capacity of.....
(insert legal capacity of person signing the bid securing declaration)

Name:.....
(insert complete name of person signing the bid securing declaration)

Duly authorized to sign the bid for and on behalf of:
.....
(insert complete name of bidder)

Date on..... Day of.....
(insert date signing)

EVALUATION CRITERIA

There are three levels of evaluation criteria subjected to Companies that bid for the Proposed for Rehabilitation of Five Earthpan in Mandera County . These are: -

1. Mandatory Requirements
2. Technical evaluation
3. Financial Evaluation

1. MANDATORY REQUIREMENT

This is a compulsory requirement and if a company fails to meet any of the mandatory requirements, it is deemed non-responsive. The following table shows the mandatory requirements

S/NO	REQUIRED DOCUMENTS	YES	NO
1	Certified copy of Certificate of incorporation		
2	Certified Copy of Valid Tax Compliance certificate (will be verified via TCC)		
3	Current Business Permit		
4	2 % Bid Bond		
5	NCA 7		
6	Pagination (BQ Must be serialized)		
7	Financial reports for the last two years		
8	RACIDA Declaration of compliance		
9.	Pricing matrix		
	TOAL SCORE		
	Add VAT		
	GRAND SUMMARY		

2. TECHNICAL EVALUATION

This is also a must for a firm or company to have and if a company fails to attain 70% of the technical requirements, it will not proceed to financial evaluation. The following table shows the technical requirements.

NO	REQUIRED DOCUMENTS	SCORE RATE	SCORE	RESPONSIVE/NON-RESPONSIVE
1	Dully filled business questionnaire	5		
2	Original and a copy of the properly filled and bounded BoQ	5		
3	Dully filled tender form	5		
4	Detailed work schedule should be provided	10		
5	Updated Company Profile	0		
6	CVs of Key personnel: Have at least a degree in specialization in Renewable energy, Mechanical/chemical engineering, Microbiology or related professional courses.	10		
7	Work experience: proof of at least three similar work	25		
8	CR 12 form	5		
	TOAL SCORE	80		

NB: Only tenderers with 70 score shall proceed to Financial evaluation stage

3. FINANCIAL EVALUATION

NO	REQUIRED DOCUMENTS	SCORE RATE	SCORE/RANK
1	At least two years Audited Financial Report (2020/ 2021)	20	

T+F= ()

Final qualification in terms of marks is 85%

