BILL OF QUANTITIES					
South Sudan Enhancing Community Resilience and Local Governance Project (ECRP)					
	Project Description:Drilling of 6 boreholes and installation of hand pump at Ngo-Sungele "B" GPS (N, E), Koti-Ngbaya GPS (N, E), Ngo-Vongo GPS (N, E),Nangawiya GPS (N, E),Ngbodar GPS (N, E), and Ngisa PHCU GPS (N, E) Baggari boma, Rehabilitation of Borehole Platform at Biringi Ps GPS (N, E), Extension pipeline and construction of water point at Bussere PHCU GPS (N, E) and Upgrading 3 boreholes into water yards- 15 cubic meter storage capacity at Hai Dinka PHCU GPS (N, E), Lokoloko PHCC GPS (N, E) and Lokoloko Secondary school GPS (N, E); Drilling 1 borehole and Construction of water yard in Hai Jedid GPS (N, E) 20 Cubic meter storage capacity at Wau North Payam, Wau County, Western Bhr El Ghazal State				Tender Package No.5
	Name of Bidder:				
ITEM	**DESCRIPTIONS**	**Unit**	**Quantity required for project**	**Unit Cost [USD]**	**Total cost (USD)**
BILL NO. 1	**PRELIMINARIES**				**$ -**
	Notes:				
	All the Bidders are requested to refer "Pricing Preamble and notes below" and works items of this Bills of Quantities shall be priced to fulfill the requirements there-in. Also see that no page or items are missing prior to pricing of this bill of quantities.	Note			
	A list of typical general items are given below. However, the Bidder is requested to price only those items that may affect this Contract.	Note			
	If no price has been stated against any item hereunder, the Contractor shall not be entitled to claim any money for such items even though he is obliged to execute the work or provide services described therein. Preliminary items priced by the Tenderer are deemed to include the cost of unpriced items.	Note			
	Cost and expenses in connection with any other preliminary item which is not listed below, but is necessary for the due completion of works, is deemed to be included in the tender rates.	Note			
1.1	**Mobilization and Site Facilities**				$ -
1.1.1	Mobilization of all required borehole drilling equipment, Construction and personel to project site.	Lump Sum	1.00		$ -
1.1.2	The contractor shall provide adequate space to serve as a temporary site office and fit it with the required facilities for his own site management staff The contractor shall provide adequate space to serve as a temporary site stores or space for storage of plant and materials for the work herein. The contractor shall provide toilet facilities for his workers and the Engineers within the site as directed and with Sanitary conditions meeting WHO Standards.	Lump Sum	1.00		$ -
1.1.3	The contractor shall provide necessary protective fencing/site hoarding, lighting, watchmen and other precautions and maintain for entire drillinf and construction period.	Lump Sum	1		$ -
	PLATES				
	Fabricate a metal visibility plate 100 x 80 mm to be wall mounted. Art work of name board will be issued by IOM	Each	12.00		$ -
1.1.4	Fabricate and install a sign post stand, 1m x 1.2m metal signboad on a 1.8m stand with a concrete foundation (min. 0.40 x 0.40 x 0.60 m, as directed by the Site Engineer). Concrete class C-25 (1:1:2) with RHS 40 x 40 x 2.5mm posts and 2mm thick sheet metal sign.	Each	6.00		$ -
	Sites Operations				$ -
1.1.5	Allow for setting out of works in accordance with drawings; liaise with client to establish exact boundaries and other written information given by the Engineer and obtain written approval from the relevant government authorities for setting out, street and building lines before commencements of construction; Checking of any setting out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy thereof.	Lump Sum	1		$ -
1.1.6	Allow for supplying water for the Works and facilities of the contractor including connection, distribution system for the work, internal arrangements and all payment to the authorities for connections. It is the responsibility of the Contractor to ensure steady and uninterrupted water supply to Works.	Lump Sum	1		$ -
1.1.7	Allow for maintaining daily records in the manner required by the Engineer to indicate factual details of, Workers, materials , Machinery and Equipment, Weather	Lump Sum	1		$ -
1.1.8	Allow for maintaining the sites in clean and orderly fashion at all times and during the entire contract period. Materials, casings etc. shall be kept neatly stacked on the site with all access-ways kept clear. All dust, debris and rubbish etc., arising out of his own works shall be continually cleared and removed from the site. The Engineer's Representative shall certify a percentage of the monthly rate or shall completely suspend the monthly amount if the contractor's maintenance is found to be unacceptable.	Lump Sum	1		$ -
1.1.9	Allow for providing all necessary safety measures to workmen (provision for proper usage of Personal protective equipment (PPE)). The bidder should submit his comprehensive safety plan with description and number in each safety device and other safety equipment proposed. The Engineer's Representative has the right to pay a percentage of the monthly component to suit the percentage accomplishment of this safety plan.	Lump Sum	1		$ -
1.1.10	Allow for all cost in connection with preparing samples for testing, making arrangements for testing of materials, goods etc., as stipulated in the Specification, obtaining test reports and submitting the same to the Engineer's Representative. (This item intends to cover all expenses incurred by the contractor in connection with sampling and testing of materials, goods etc., required by the specifications, other than those provided for in the bills of quantities.)	Lump Sum	1		$ -
	Insurances, Bonds & Fees				$ -

1.1.11	Allow for Contractor's All Risk Insurance Policy, including third party liability and from the starting date until the defects liability certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the works, plant, materials, and equipment) which are not employers risk but are contractors risk Allow for insurance against claims for worker's compensation. Engineer's and Consultant's representatives, shall be included in the Insurance Policy. Allow for insurance against loss or damage to the works, adjacent structures, any existing overhead and/or underground services that may cause damages during the construction	Lump Sum	1		$ -

	Environmental and Social Safeguarding Requirements				**$ -**
1.1.12	*Allow for providing all necessary safety measures to workmen (provision for proper usage of Personal protective equipment (PPE). The bidder should submit his comprehensive safety plan with description and number in each safety device and other safety equipment proposed. The Engineer's Representative has the right to pay a percentage of the monthly component to suit the percentage accomplishment of this safety plan.*				
1.1.13	Conduct environmental and social risk assessment and management on all subproject sites including conducting inspections to ensure adherenace to the requirment of IOM and the World Bank	**Lump Sum**	1		$ -
1.1.14	Provide resources to ensure a safe working enviroment including signage, access control,fall protection equipment and devices, ocupational safety and health equipment, and first aid kit.	Lump Sum	1		$ -
1.1.15	Ensure measures are put in place to guarantee community safety including stakeholder engagement and information disclosure	Lump Sum	1		$ -
1.1.16	Acquire all relevant Environmental perts, licenses and authorisation prior to engaging in any activities that require such. This includes adhereing to conditions of any licenses issues.	Lump Sum	1		$ -
1.1.17	Rehabilitate and ensure maintanace of aesthetic environment including ensuring the sound management of waste on all sites.	Lump Sum	1		$ -
1.1.18	Ensure there is a designated qualified and competent environmental and social safeguards specialist within the contrcator's team atleast for each subproject.	Month	6		$ -
ITEM	**DESCRIPTIONS**	**Unit**	**Quantity required for project**	**Unit Cost [USD]**	**Total cost (USD)**
BILL NO.2A	**DRILLING BOREHOLE, WELL CONSTRUCTION AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU BAGARI PAYAM, AND HAI JEDID-WAU NORTH PAYAM- WAU COUNTY**				**$ -**
2.1	**Site Selection**				**$ -**
2.1.1	Select a location for borehole drilling, using geo-electrical technique. The suitable sites recommended by the hydrogeologist able to provide borehole yield of at least 4m3/hr. Geophysical survey report submitted to the ECRP/IOM infrasctructure technical Lead	LS	1.00		$ -
2.2	**Drilling**				**$ -**
2.2.1	Drilling of a minimum of 13"Ø diameter borehole in the overbuden zone.	m	20.00		$ -
2.2.2	Drilling of a minimum of 9"Ø diameter borehole from (40- 50)m to a minimum depth of 90 meters.	m	80.00		$ -
2.2.3	Collection of representative, continous samples of 125 grams minimum of the strata penetrated for every 2m interval and when required by the ECRP/ IOM Project Engineer. The samples to be preserved in polythene bags or suitable sealable containers and clearly marked in waterproof ink according to Location, borehole reference identification number (supplied by IOM), date taken and depth [from – to].	LS	1.00		$ -
2.3	**Well Construction**				**$ -**
2.3.1	Supply and installation of 6"Ø nominal diameter uPVC, drinking water standards and PN10 rated casing of 6.5mm minimum thickness. Casing shall be installed to a minimum depth corresponding to the overbuden zone in hard formation. For unconsolidated formation, the casing shall be installed to borehole depth and fitted with a bottom cap. Casings compliance to ISO 9001:2018 and DIN4925.	m	80.00		$ -
2.3.2	For unconsolidated formations, supply and installation of 6" nominal diameter casings screens with horizontal slot opening size of 0.5mm to 1mm with a minimum aperture of 6%. Casing minimum wall thickness of 6.5mm. Casings compliance to ISO 9001:2018 and DIN4925.	m	20.00		$ -
2.3.3	Supply and installation of river-bed, washed, well-rounded and of uniform grading gravel packs of 1-5mm as per ToR.	LS	1.00		$ -
2.3.4	Supply and installation of the sanitary seal around the casing above the filter pack. A sanitary seal of 3m shall be installed in the annular space from the filter/gravel pack.	LS	1.00		$ -
2.3.5	Backfilling of borehole annulus and installation of 3m of sanitary seal below the ground level surface. Make provision for installation of pedestal stand	LS	1.00		$ -
2.4	**Well Development**				**$ -**
2.4.1	Develop the well as per ToR specification.	hrs	6.00		$ -
2.5	**Pump testing**				**$ -**
2.5.1	Conduct step drawdown and recovery test as per ToR specification.	hrs	8.00		$ -
2.5.2	Conduct constant rate and recovery test as per ToR specification.	hrs	8.00		$ -
2.6	**Water quality**				**$ -**
2.6.1	Collect 2 x 1 litre water samples, and submit to an approved laboratory for analysis. Water quality shall comply with the minimum South Sudan quality standards and report shared to IOM/ECRP infrastructure technical lead	LS	1.00		$ -
2.6.2	Conduct field testing using portable water quality testing equipment for EC, TDS, Temperature, PH and Turbidity.	LS	1.00		$ -
2.6.3	Clean and disinfect the borehole as per ToR.	LS	1.00		$ -
2.8	**Reporting**				**$ -**
2.8.1	Submit well completion report as per IOM/ECRP requirements including results of water quality analysis as per the ToR	No	1.00		$ -
BILL NO.2B	**PLATFORM CONSTRUCTION AND INSTALATION INDIAN MARK II HAND PUMPS FOR BOREHOLES AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU**				**$ -**
2B.1.O	Supply and construct borehole platform and soak pit in accordance with ToR and ECRP platform design. The soak pit shall be reamed 600mm with burnt bricks or lateriteboulders with 150mm projected above ground level and shall be covered with 1000-gauge polythene sheeting before finally covering with the excavated soil from the soak away pit.	LS	1.00		$ -
2B.1.1	Supply and installation of INDIA Mark II Hand Pump including 60m of rods and GI riser pipes,cylinder assembly ,water tank and head assembly.	No	1.00		$ -

BILL NO.2C	**BOREHOLE REHABILITATION AT BIRINGI PRIMARY SCHOOL**				**$ -**
2C.1.0	Dismantle the handpump and break the existing dilapidated platform; Reconstruction the platform; Supply and install INDIA Mark II Hand Pump including 60m of rods and GI riser pipes,cylinder assembly ,water tank and head assembly.	LS	1.00		$ -
	BILL SUMMARY-DRILLING OF BOREHOLES AND REHABILITATION				**$ -**
BILL NO.2A	DRILLING BOREHOLE, WELL CONSTRUCTION AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU BAGARI PAYAM, AND HAI JEDID-WAU NORTH PAYAM- WAU COUNTY	Unit	7.00	$ -	$ -
BILL NO.2B	PLATFORM CONSTRUCTION AND INSTALATION INDIAN MARK II HAND PUMPS FOR BOREHOLES AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU	Unit	6.00	$ -	$ -
BILL NO.2C	BOREHOLE REHABILITATION AT BIRINGI PRIMARY SCHOOL	Unit	1.00	$ -	$ -
BILL NO. 3A	**CONSTRUCTION OF 2 WATER KIOSKS EACH WITH 6 TALBOT TALFLOW SELF-CLOSING TAPS IN HOLLOW BLOCK AND CONCRETE MASONRY AT HAI JEDID VILLAGE-WAU NORTH PAYAM**				**$ -**
3A.1	**Excavation and Earthwork**				**$ -**
3A.1.1	Excavate to remove top vegetable soil, average 200mm deep	m2	6.00		$ -
3A.1.2	Excavate in soft material for foundation wall and strip footings, 0 to 1.0 m deep starting from stripped levels	m3	7.00		$ -
	Backfilling				
3A.1.3	Return, fill in and ram selected excavated material around foundations	m3	4.00		$ -
	Disposal of Surplus spoil				
3A.1.4	Load and cart away surplus excavated material from site to an approved dumping site	m3	3.00		$ -
	Selected filling				
3A.1.5	Approved filling, well watered and compacted in layers not exceeding 150mm deep [under floor slabs]	m3	1.00		$ -
3A.1.6	50mm Thick quarry dust blinding to surfaces of hardcore [under floor slabs]	m2	0.70		$ -
	Anti-termite treatment				
3A.1.7	Chemical anti-termite treatment as "Premise 200 SC" or other equal and approved executed complete by an approved specialist under a ten (10) year guarantee [Under ramps, steps and paving slabs]	m2	12.32		$ -
	Damp proof membrane				
3A.1.8	1000 Gauge polythene or other equal and approved damp proof membrane laid under surface bed with 300mm side and end laps	m2	5.00		$ -
3A.2	**Concrete and Brick work**				**$ -**
	Plain concrete class 15 (mix 1:3:6)				
3A.1.1	50mm Thick Blinding under foundations	m2	0.10		$ -
	Insitu concrete class 25, vibrated and reinforced as described, in:-				
	Insitu concrete class 25, vibrated and reinforced as described, in:-				$ -
3A.1.3	Strip footing	m3	1.54		$ -
3A.1.4	Ring beams	m3	1.54		$ -
3A.1.5	150mm Thick floor slab	m2	1.62		$ -
	500 mm wide water channel	m2	0.77		$ -
	Reinforcement				
	High tensile steel reinforcement to B.S. 4461 in structural concrete work including cutting, bending, hoisting, fixing, tying wire and spacing blocks				$ -
	8 mm diameter bars	Kg	15.00		$ -
	10 mm diameter bars	Kg	10.00		$ -
	12 mm diameter bars	Kg	34.00		$ -
	A142 Mesh reinforcement ; B.S. 4483 weighing 2.22 kgs per square meter including bends, tying wire and spacing blocks				$ -
3A.1.6	Fabric mesh reinforcement in slabs	m2	5.60		$ -
	Sawn formwork to:-				
3A.1.7	Vertical sides of strip footings	m2	2.00		$ -
	Sides and soffites of beams and lintels	m2	5.00		$ -
3A.1.8	Edges of 100mm thick floor bed and ramp	m	8.00		$ -
	Block/Brickwork				
	Solid concrete block walls with minium characteristic comprehensive strength of 7.0N/mm2; bedded, jointed and pointed in cement sand (1:3) mortar; reinforced with hoop with hoop iron after every alternate course.				
3A.1.9	200mm Thick wall below ground	m2	10.00		$ -
3A.1.10	200mm Thick wall above ground	m2	20.00		$ -
	Roof construction				
	Notes:				
	Roofing cost includes all timber framing i.e purlins, rafters, base blate according to the design drawing and technical specification.				
3A.1.11	Supply and Fix 28 gauge galvanized iron sheets; fixed to 75x50mm timber purlins, 100x50mm rafters 100x50 wall plate and 200x25mm facsia board.	m2	8.00		$ -
3A.1.12	Supply and fix 100x50mm wall plate	m	10.60		$ -
3A.1.13	Supply and fix 100x50mm timber rafters	m	10.60		$ -
3A.1.14	Supply and fix 75x50mm timber purlins	m	12.00		$ -
3A.1.15	Supply and fix 200x25mm fascia board	m	10.60		$ -
3A.2	**Finishes**				**$ -**
	Exposed wall and beam surfaces: 15mm Cement and sand (1:3) render on concrete work to:-				
3A.2.1	Wall surfaces (both sides)	m2	42.00		$ -
	Sand surfaces and fill uneven surfaces with stucco filler paste; prepare and apply two undercoats of premium quality cream (RAL 9001) paint and two coats of premium quality weather proof permaplast reisn based acrylic paint to:-				
3A.2.2	Wall and concrete surfaces	m2	42.00		$ -
	Floor finishes				
	Insitu cement and sand (1:3) screed				

3A.2.3	50mm Thick screed, finished with steel trowel	m2	4.00		$ -
3A.2.4	6 Talbot Talflow self-closing taps each in hollow block and concrete masonry	Each	2.00		$ -
3A.3	**Steel Grill Window and Door**				**$ -**
	Mild steel grill door made out of cold rolled steel sections thoroughly cleaned and phosphatized to resist corrosion before receiving two coat of rust inhibiting primer				
	Door shutter made out of 10x10mm solid mild steel grilles hexagonal cage comprising of 0.5mm thick mild thick steel plate panels (300mm high middle parts); all welded to 40x40x3mm SHS frame and 20x20x3mm SHS intermediate frame; fixed to 40x40x5mm thick angle mild steel RHS external frame grouted below finished floor level as per the details and fixed to walls: All iron mongery and lugs fixed to manufacturer's specifications (See details provided)				
3A.3.1	Single leaf door overall size 800x2100mm high	Each	1.00		$ -
3A.3.2	Window made of rolling metal shutters overall size 1600x900mm high	Each	1.00		$ -
3A.3.3	Metal grid mesh to cover 2800x300mm wide water channel.	m2	3.36		$ -
3A.3.4					$ -
BILL NO. 3B	**EXCAVATION AND CONSTRUCTION OF SOAK AWAY PITS AT HAI JEDID VILLAGE,HAI DINKA PHCU ,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL -WAU NORTH PAYAM**				**$ -**
3B.1	**Excavation**				$ -
3B.1.1	Excavate for soak pit; 0-1.50m deep	m^3	3.00		$ -
3B.1.2	Ditto; 1.5- 2.5m deep	m^3	2.00		$ -
3B.2	**Disposal**				$ -
3B.2.1	Load and cart away surplus spoil	m^3	2.00		$ -
3B.2.2	Backfill selected and approved excavated materials around foundations	m^3	3.00		$ -
3B.3	**Block/Brickwork**				$ -
	Burnt brick walling; bedding, jointing and pointing in cement sand (1:3) mortar				
3B.3.1	200 mm thick wall	m^2	5.00		$ -
3B.4	**Selected filling**				$ -
3B.4.1	Aggregate filling into the soak pit of size 20-30mm; 0 - 0.7m deep	m3	1.24		$ -
3B.4.2	Hardcore fillings into the soak pit; from 0.7 - 2.5m	m3	5.00		$ -
3B.5	**Covers**				$ -
3B.5.1	Provide and install plastic cover topped with soil above the soak pit.	nr	1.00		$ -
3B.6	**Sundries**				$ -
3B.6.1	Allow for making 150 mm diameter openings in 200 mm clay brick walling	nr	1.00		$ -
BILL NO. 3C	**CONSTRUCTION OF 3 WATER POINTS EACH OF 4 TALBOLT TALFLOW SELF CLOSING TAPS IN HOLLOW BLOCK CONCRETE MASONRY AND FENCED WITH CHAIN LINK AT HAI DINKA PHCU ,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL.**				**$ -**
3C.1	**Excavation and Earthwork**				**$ -**
3C.1.1	Excavate to remove top vegetable soil, average 200mm deep	m2	3.00		$ -
3C.1.2	Excavate in soft material for foundation wall and strip footings, 0 to 1.0 m deep starting from stripped levels	m3	3.00		$ -
	Backfilling				
3C.1.3	Return, fill in and ram selected excavated material around foundations	m3	1.00		$ -
	Disposal of Surplus spoil				
3C.1.4	Load and cart away surplus excavated material from site to an approved dumping site	m3	2.00		$ -
	Selected filling				
3C.1.5	Approved filling, well watered and compacted in layers not exceeding 150mm deep [under floor slabs and ramp]	m3	3.00		$ -
3C.1.6	50mm Thick quarry dust blinding to surfaces of hardcore [under floor slabs]	m2	9.00		$ -
	Anti-termite treatment				
3C.1.7	Chemical anti-termite treatment as "Premise 200 SC" or other equal and approved executed complete by an approved specialist under a ten (10) year guarantee [Under ramps, steps and paving slabs]	m2	9.00		$ -
	Damp proof membrane				
3C.1.8	1000 Gauge polythene or other equal and approved damp proof membrane laid under surface bed with 300mm side and end laps	m2	2.00		$ -
3C.2	**Concrete and Brick work**				**$ -**
	Plain concrete class 15 (mix 1:3:6)				
3C.2.1	50mm Thick Blinding under foundations	m2	1.00		$ -
	Insitu concrete class 25, vibrated and reinforced as described, in:-				$ -
3C.2.2	Strip footing	m3	1.00		$ -
3C.2.3	Ramp	m2	5.00		$ -
3C.2.4	200mm Thick floor slab	m2	5.00		$ -
	Reinforcement				
	A142 Mesh reinforcement : B.S. 4483 weighing 2.22 kgs per square meter including bends, tying wire and spacing blocks				$ -
3C.2.5	Fabric mesh reinforcement in slabs	m2	5.00		$ -
	Sawn formwork to:-				
3C.2.6	Vertical sides of strip footings	m2	2.00		$ -
3C.2.7	Edges of 100mm thick floor bed and ramp	m	8.00		$ -
	Block/Brickwork				
	Solid concrete block walls with minium characteristic comprehensive strength of 7.0N/mm2; bedded, jointed and rendered in cement sand (1:3) mortar; reinforced with hoop iron after every alternate course.				
3C.2.8	200mm Thick wall below ground	m2	2.00		$ -
3C.2.9	200mm Thick wall above ground	m2	2.00		$ -
3C.3	**Finishes**				**$ -**
	Exposed wall and beam surfaces: 15mm Cement and sand (1:3) render on concrete work to:-				
3C.3.1	Wall surfaces (both sides)	m2	6.00		$ -
	Floor finishes				
	Insitu cement and sand (1:3) screed				

3C.3.2	50mm Thick screed, finished with steel trowel	m2	4.00		$ -
3C.3.3	4 Talbot Talflow self-closing taps each in hollow block and concrete masonry	Each	1.00		$ -
3C.4	**Chainlink fencing**				**$ -**
	1. Chainlink fence all around the water point and the top- 2.5x2.5m (10metres perimeter)				
	2. 1200mm wide x 2000mm high door for pedestrican access				
3C.4.1	Supply and installation circular steel hollow section tubes of 50mm diameter by 3mm thickness casted in 500mm mass concrete (concrete costed seperately) approximately 2.5m each pipe long, around the water point.	m	10.00		$ -
3C.4.2	40x40x3mm rolled steel angle top rail welded	m	8.00		$ -
3C.4.3	Supply and fix 2000mm high galvanised chain-link fencing (diamond wire mesh), opening 50x50mm, wire 3mm, heavy duty chain-link fencing fixed on steel pipe columns to cover all sides of the water point and the top.	m2	17.00		$ -
3C.4.4	Single leaf gate overall size 1200x2000mm high; comprising 75x50x3mm frame fixed with chain-link fencing heavy duty slide bolt assembled with 4mm thick steel hasp and padlock;	Nr	1.00		$ -
ITEM	**Description**	Unit	QTY	Unit Cost [USD]	Total cost (USD)
BILL NO. 4A	**BoQ FOR CONSTRUCTION OF 20 CUBIC STORAGE WATER YARD, AND INSTALLATION OF SUBMERSIBLE PUMP POWERED BY SOLAR SYSTEM AT HAI JEDID VILLAGE-WAU**				**$ -**
4A.0	**Water yard construction and installation of subersible pump powered by solar system at Hai Jedid Village**				**$ -**
4A.1	Supply and install a Dayliff or Lorentz solar system providing at least 36m3/day considering the peak sunhours of sunshine per day. The submersible pump size shall be decided after the test pumping results and designing the water supply solar system in which case a VO may be issued. The system shall comprise of a submersible pump and well probe,(borehole presure sensor) float switch, smart PSU with wireless data connect, PV Disconnect, surge protector and lighting arrestor with a minimum of 1 piece of 8-foot copper-plated grounding rod. Design of the solar system needs to be inspected and validated by IOM prior to procurement and installation.	LS	1		$ -
4A.2	Supply and install a parallel series solar pannels certified to ISO, IEC 61215 and 61730 (TÜV Rheinland) and CE oversized by 1.2 to 1.3 times the motor size. The solar panels shall be mounted facing south and a tilt angle of not less than 7deg and not exceeding 15 degree, mounted onto a fabricated frame above the storage tanks. NB:The actual configuration of the solars shall be decided after the water supply solar system design in which case a VO may be issued.	LS	1		$ -
4A.3	Horizontal installation of 4 flow meters, at the inlet of the storage, and 1 per water kiosk.	pcs	3		$ -
4A.4	Supply and installation of 6.0 metre high metalic stand tower for tank, evenly coated with a layer of anti-oxide paint and overlayed with an additional coating of grey/silver paint and fitted with a hooped cat-ladder, top walkways of 2.1mm thickness and safety hand railings. Tower to comply to manufacturing standards: Dead/Live load analysis to BS 6399. Wind load analysis to CP3 ch V 1972. Structural steel work to BS 5950 Part 1 1990.	LS	1		$ -
4A.5	Supply and installation of 20 Cubic meter steel tank with a free boat of 300mm. The tank shall be constructed of mild steel pressed panels of 6mm thick for the bottom, first layer of panels and 5mm thickness for the top layer of panels and include internal bracings, brackets and a calibrated level indicator with a 1.5mm thick mild steel roof cover, thermo-resistant sealant, coated with 2 layers of black bituminous paint on the inside, a single layer of zinc phosphate primer on the outside covered with a single layer of silver Aluminium paint. NB: The tank capacity and material may be changed after pumping test results and water quality analysis results in which case a VO may be issued..For subprojects located in deep field locations it may inconvinience the contractor interms of mobilization	Each	1		$ -
4A.6	Supply and install 2-1/2" HDPE underground distribution and uPVC, PPR class 10 above ground pipeline and fittings including GI pipe for the tank outlet/ back wash and overflow. NB: The pipe size may also be changed after the water supply solar system design in which case a VO may be issued.	m	300		$ -
	WATER YARD SITE LAYOUT				
4A.7	The borehole shall be fitted with a well head casted in a concrete platform of minimum 0.3m height and protected by a man hole height not less than 800mm ms with a cast iron trap fitted with a lockable system.	LS	1		$ -
4A.8	600mm x 600mm man hole of height not less than 800mm off setting by 200mm above ground level with a lockable steel cover shall be constructed to enclose,protect and ease monitoring of flow meter.	NO	1		$ -
4A.9	Levelling of the site and laying a 300mm thick in layers n.e. 100mm thick, well compacted murram of 60% minimum aggregate approved by the IOM Supervisor prior to installation.	m2	110.25		$ -
	REPORTING				
4A.10	Submit GOSS well completion report and IOM reporting template, including results of water quality analysis.	No	1		$ -
BILL NO. 4B	**CONSTRUCTION OF CHAINLINK FENCE (10X10M) WITH PEDESTAL ACCESS GATE AT HAI JEDID VILLAGE-WAU**				**$ -**
	Notes:				
	1. Chainlink fence all around the site- Approx. 40 metres perimeter.				
	2. 1200mm wide x 2000 mm high Gate for pedestrican access				
	Chainlink fencing				
4B.1	**Excavation**				
4B.1.1	Excavate for stub-columns not exceeding 1000mm from ground level and cart away arisings (average depth 0.5m)	m3	2		$ -
4B.1.2	Remove and cart away from site surplus excavated material as directed	m3	2		$ -
4B.2	**Mass concrete grade cube test M15(1:2:4):-**				
	Mass concrete blinding class 10 (1:3:6) :-				

4B.2.1	50mm thick strip base [100mm wide]	m3	1		$ -
	Insitu concrete grade 20, vibrated and reinforced as described, in:-				
4B.2.2	Column bases and Sub-columns below ground level	m3	2		$ -
	Sawn formwork to:-				
4B.2.3	Vertical sides of strip base [0-75mm girth]	m2	11		$ -
4B.2.4	Vertical sides of column bases	m2	6		$ -
4B.2.5	Vertical sides of columns below ground	m2	10		$ -
	Reinforcement				
	High tensile steel reinforcement to B.S. 4461 in structural concrete work including cutting, bending, hoisting, fixing, tying wire and spacing blocks				
4B.2.6	8 mm diameter bars	kg	35		$ -
4B.2.7	10 mm diameter bars	kg	70		$ -
4B.3	**Columns**				
	Note: Rate for steel shall include all necessary welding, cutting, joining members, drilling holes and paint work				
	All steel sections to be thoroughly cleaned and phosphatized to resist corrosion before receiving 2 undercoats of brown rust inhibiting primer, 2 oats of matt white oil paint and finished with 2 coats of premium quality oil based acrylic paint of approved colour				
4B.3.1	50x50x4mm Thick rolled steel angle column posts; fixed into 500mm deep concrete bases (concrete bases measured separately) [Total of 36no. Angle posts each approx. 3.5m long]	m	70		$ -
4B.3.2	Extra for diagonal bracing cables of corner/ end posts, approximately 4250mm long each	Nr	8		$ -
	Steel angle coping				
4B.3.3	50x50x4mm Thick rolled steel angle copping plate welded on top of steel posts (measured separately)	Nr	18		$ -
4B.3.4	40x40x3mm rolled steel angle top rail welded	m	40		$ -
	Chain-link				
4B.3.5	Supply and fix 2000mm high galvanised chain-link fencing (diamond wire mesh), opening 50x50mm, wire 3mm, tied to steel heavy duty chain-link fencing fixed on steel angle columns at 1500mm centres (columns measured separately)	m	40		$ -
	Razor wire on top of pedestal access gate				
4B.3.6	700mm diameter Razor wire mounted on top of gate using and including 40x40x3mm steel angle bars welded on top of the gate at 50mm centres as detailed	m	5		$ -
	Razor wire on top of chain-link fence & pedestral access gate				
4B.3.7	700mm diameter Razor wire mounted on top of gate using and including 40x40x3mm steel angle bars welded at 1500mm centres to coping bar over chain-link fence (coping measured separately)	m	35		$ -
4B.3.8	Supply and fix 6No. Strands of Galvanized plane tension wire fixed through 40x40x3mm steel angle bars (steel angle bars measured with razor wire above)	m	120		$ -
	Pedestal access gate 1200x2000mm				
	[Refer to provided details]				
	Mild steel plated gate made out of cold rolled steel sections; thoroughly cleaned and phosphatized to resist corrosion before receiving 2 undercoats of brown rust inhibiting primer, 2 oats of matt white oil paint and finished with 2 coats of premium quality oil based acrylic paint of approved colour				
	Gate made out of 25x25x2mm thick intermediate vertical SHS bars fixed to 75x50x3mm RHS external frame and 50x50x3mm SHS middle stile; 4No. heavy duty security hinges on each leaf; External frame to be fixed to 100x100x4mm RHS columns (m.s) per the details				
4B.3.9	Single leaf gate overall size 1200x2000mm high; comprising heavy duty slide bolt assembled with 4mm thick steel hasp and padlock; 1No. Tower bolt	Nr	1		$ -
ITEM	**Description**	Unit	QTY	Unit Cost [USD]	Total cost (USD)
BILL NO. 5C	**BoQ FOR UPGRADING A HANDPUMP TO 5 CUBIC STORAGE WATER YARD AT HAI DINKA PHCU,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL , WAU NORTH PAYAM ,WAU COUNTY**				**$ -**
	Handpump dismantle				**$ -**
5C.1	Carefully dimantle the existing handpump by removal of head assembly,water tank assembly ,riser main pipes and connecting rods ,cylinder assemply.handover to the local authority all the removed items in the presence of IOM /ECRP Engineer .	LS	1		$ -
	Pump testing				
	condut pump testing to check if the borehole is able to provide a yield of 3m3 /hr				
5C.2	Conduct step drawdown and recovery test as per ToR specification.	hr	8		$ -
5C.3	Conduct constant rate and recovery test as per ToR specification.	hr	8		$ -
	Water quality analysis				
5C.4	Collect 2 x 1 litre water samples, and submit to an approved laboratory for analysis. Water quality shall comply with the minimum South Sudan quality standards and report shared to IOM/ECRP infrastructure technical lead	LS	1		$ -
5C.5	Conduct field testing using portable water quality testing equipment for EC, TDS, Temperature, PH and Turbidity.	LS	1		$ -
5C.6	Clean and disinfect the borehole as per ToR.	LS	1		$ -
5C.7	Submit well completion report as per IOM/ECRP requirements including results of water quality analysis as per the ToR	LS	1		$ -
	Installation of submersible pump and solar system				$ -
5C.8	Design, Supply and install a Dayliff or Lorentz solar system providing at least 36m3/day considering the peak sunhours of sunshine per day. The submersible pump size shall be decided after the test pumping results and designing the water supply solar system in which case a VO may be issued. The system shall comprise of a submersible pump and well probe,(borehole presure sensor) float switch, smart PSU with wireless data connect, PV Disconnect, surge protector and lighting arrestor with a minimum of 1 piece of 8-foot copper-plated grounding rod. Design of the solar system needs to be inspected and validated by IOM prior to procurement and installation.	LS	1		$ -

5C.9	Supply and install a parallel series solar pannels certified to ISO, IEC 61215 and 61730 (TÜV Rheinland) and CE oversized by 1.2 to 1.3 times the motor size. The solar panels shall be mounted facing south and a tilt angle of not less than 7deg and not exceeding 15 degree, mounted onto a fabricated frame above the storage tanks. NB:The actual configuration of the solars shall be decided after the water supply solar system design in which case a VO may be issued.	LS	1		$ -
5C.10	Horizontal installation of 3 flow meters, 1 at the inlet of the storage, and 1 per water kiosk.	pcs	3		$ -
5C.11	Supply and installation of 6.0 metre high metalic stand tower for tank, evenly coated with a layer of anti-oxide paint and overlayed with an additional coating of grey/silver paint and fitted with a hooped cat-ladder, top walkways of 2.1mm thickness and safety hand railings. Tower to comply to manufacturing standards: Dead/Live load analysis to BS 6399. Wind load analysis to CP3 ch V 1972. Structural steel work to BS 5950 Part 1 1990.	LS	1		$ -
5C.12	Supply and installation of 15 Cubic meter steel tank with a free boat of 300mm. The tank shall be constructed of mild steel pressed panels of 6mm thick for the bottom, first layer of panels and 5mm thickness for the top layer of panels and include internal bracings, brackets and a calibrated level indicator with a 1.5mm thick mild steel roof cover, thermo-resistant sealant, coated with 2 layers of black bituminous paint on the inside, a single layer of zinc phosphate primer on the outside covered with a single layer of silver Aluminium paint. NB: The tank capacity and material may be changed after pumping test results and water quality analysis results in which case a VO may be issued..For subprojects located in deep field locations it may inconvinience the contractor interms of mobilization	LS	1		$ -
5C.13	Supply and install 2-1/2'' HDPE underground distribution and uPVC, PPR class 10 above ground pipeline and fittings including GI pipe for the tank outlet/ back wash and overflow. NB: The pipe size may also be changed after the water supply solar system design in which case a VO may be issued.	m	100		$ -
	WATER YARD SITE LAYOUT				$ -
5C.14	The borehole shall be fitted with a well head casted in a concrete platform of minimum 0.3m height and protected by a man hole height not less than 800mm ms with a cast iron trap fitted with a lockable system.	LS	1		$ -
5C.15	600mm x 600mm man hole of height not less than 800mm off setting by 200mm above ground level with a lockable steel cover shall be constructed to enclose,protect and ease monitoring of flow meter.	No	1		$ -
5C.13	Levelling of the site and laying a 300mm thickness well compacted murram of 60% minimum aggregate approved by the IOM Supervisor prior to installation.	LS	1		$ -
BILL NO. 1	PRELIMINARIES	Unit	1	$ -	$ -
BILL NO.2A	DRILLING BOREHOLE, WELL CONSTRUCTION AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU BAGARI PAYAM, AND HAI JEDID-WAU NORTH PAYAM- WAU COUNTY	Unit	7	$ -	$ -
BILL NO.2B	PLATFORM CONSTRUCTION AND INSTALATION INDIAN MARK II HAND PUMPS FOR BOREHOLES AT NGO-SUNGELE "B", KOTI-NGBAYA, NGO-VONGO, NANGAWIYA, NGBODAR, AND NGISA PHCU	Unit	6	$ -	$ -
BILL NO.2C	BOREHOLE REHABILITATION AT BIRINGI PRIMARY SCHOOL	Unit	1	$ -	$ -
BILL NO. 3A	CONSTRUCTION OF 2 WATER KIOSKS EACH WITH 6 TALBOT TALFLOW SELF-CLOSING TAPS IN HOLLOW BLOCK AND CONCRETE MASONRY AT HAI JEDID VILLAGE-WAU NORTH PAYAM	Unit	2	$ -	$ -
BILL NO. 3B	EXCAVATION AND CONSTRUCTION OF SOAK AWAY PITS AT HAI JEDID VILLAGE,HAI DINKA PHCU ,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL -WAU NORTH PAYAM	Unit	5	$ -	$ -
BILL NO. 3C	CONSTRUCTION OF 3 WATER POINTS EACH OF 4 TALBOLT TALFLOW SELF CLOSING TAPS IN HOLLOW BLOCK CONCRETE MASONRY AND FENCED WITH CHAIN LINK AT HAI DINKA PHCU ,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL.	Unit	3	$ -	$ -
BILL NO. 4A	BoQ FOR CONSTRUCTION OF 20 CUBIC STORAGE WATER YARD, AND INSTALLATION OF SUBMERSIBLE PUMP POWERED BY SOLAR SYSTEM AT HAI JEDID VILLAGE-WAU	Unit	1	$ -	$ -
BILL NO. 5C	BoQ FOR UPGRADING A HANDPUMP TO 5 CUBIC STORAGE WATER YARD AT HAI DINKA PHCU,LOKOLOKO PHCC AND LOKOLOKO SECONDARY SCHOOL , WAU NORTH PAYAM ,WAU COUNTY	Unit	3	$ -	$ -
				GRAND TOTAL	**$ -**