



## Rehabilitation of Agricultural Wells in Jeftlik and Jordan Valley - Phase 2

- A. Unit prices of all items shall include but not limited to cleaning the site from all surplus, backfill material, or result of excavation, repairing all damages of concrete or stone walls, existing water pipeline, cables...etc. that may occur in the course of executing the work. Unit prices also include testing, flushing, disinfections and commissioning of well pump and piping work components, all according to the technical specification and as shown on the drawings and as directed by the engineer.
- B. Mechanical works: The contractor shall, when pricing the rates of this bill take into consideration including and allow for the costs or expenses of all requirements stipulated in the preambles, drawings and technical specifications of the contract. The following notes should be considered when pricing.
  1. The price shall include all connections to existing piping.
  2. The contractor should consider prior to pricing the contract, visiting the site and be fully aware for the requirements and the installation procedures of all the mechanical and electrical items, equipments and civil work items. It is the responsibility of the contractor to provide mobile electric power generator necessary to perform all his works to well sites without electric power grids.
  3. Dismantle and disposal of cancelled existing piping network, fittings, valves, were shown on drawings and /or interferes with the new installation. The rate includes delivery of dismantled material to client storage area or disposal to an approved dumping location. All works should be done in close coordination with client engineer.
  4. Any manufacturer's names, trade names, brand names or catalogue numbers used in the specifications are for the purpose of describing and establishing general performance and quality levels. Such references are not intended to be restrictive. Bids are invited on these and comparable brands or products provided the quality of the proposed products meet or exceed the quality of the specifications listed for any item.
  5. Submittals for equipments may include equivalent brands/makes of equal or better quality than those mentioned in the BoQ . However, during the evaluation stage, UNDP has the right to ask the potential successful bidder to **change any brand/make which does not meet the required quality level**. If the contractor fails to change the proposed brand/make as per UNDP' request, while keeping the same quoted price, then UNDP has the right to **reject** his bid.

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



*Empowered lives.  
Resilient nations.*

[ITB-2014-260]

6. The Bidders shall quote competitive and reasonable prices for BoQ items, **including for Provisional items**, with an acceptable margin of deviation in comparison to the real local market prices at the time of bids preparation. UNDP, however, reserves the right either to implement or cancel the Provisional items subject to availability of funds. In case of Unbalanced pricing (i.e. despite an acceptable total evaluated price, the price of one or more BoQ line items is significantly over or understated), UNDP had the right to **reject** the unbalanced bid if it determines that the lack of balance does pose an unacceptable Risk.
7. The lowest priced Bidder is the one who quoted the lowest Grand Total **excluding** the provisional items (**total of column (A) in the BoQ summary page**). All bidders are requested to price the **provisional items** competitively and reasonably as this will be taken into consideration in the bids evaluation. UNDP reserve the right to **reject** any bid which doesn't include the provisional items duly priced. Furthermore, UNDP reserves the right to subject the priced provisional items to price negotiations based on the reasonable market prices at the time of implementation.
8. The contractor has to submit with his offer the performance curves of the offered pump which illustrate the H-Q curves with the pump efficiency at several points representing the major pumping range. The submitted H-Q curves have to be proved by the contractor (without any extra financial charges) through testing the pump for at least 6 hours continuously after its installation in the well. It is the responsibility of the contractor to procure the necessary measuring equipment and tools necessary for the performance test of each pump.
9. All equipment (flow meter, pressure gages, flow switches pressure relief valves, pressure switches, etc..) of each pumping system have to be adjusted and calibrated to be appropriate exactly for the situation and pumping requirements on each well to ensure proper and safe operation for the pump and the associated electric motor.
10. the scope of work may become limited to 4 agricultural wells instead of 5 due to budget constraints, Therefore, payments and deliverables will be made based on the actual quantities.
11. Below BoQ should be priced in United States Dollars (USD) currency.
12. Contractor is responsible for generating the electricity needed for his work. Hiring of diesel electric generator is a solution.
13. Contractor is responsible in case the need for any tests required before or after the implementation according to the specifications and conditions specified in the bid documents.
14. Pre-shipment inspection of the pumps at the manufacturer plant required. Therefore, the contractor is required to ensure that the manufacturer of the pumps will host and fully cooperate with the designated Experts from the Employer side to check the pumps quality. The costs associated with the said Expert's mission, such as such as tickets, travel costs, shall be borne by the Employer alone.

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

## Proposed Development Needs

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
1	<b>Dismantling:</b> Carefully dismantle the existing vertical turbine pump unit, diesel motor, pipes and any other parts inside and outside the pump room have to be removed and delivered as instructed by the engineer. The work shall also include all needed equipment (hoist, tripod, crane, electric generator... etc.) to complete the work as required. The work shall be completed according to the contract conditions, technical specifications and the engineer's approval.	LS	1		
2	<b>Submersible Motor Pump Set:</b> Supply, install and operate a new submersible pump with all the accessories it needs to get a working system. The submersible pump have to be with none-return flow valve , pump efficiency > 70% at design point, driven by a submersible three phase induction motor with rated power =65 Horse Power, input voltage (380V-415Vrms),50Hz, max speed n= 3000rpm, PF > 0.87 and motor efficiency>90%. The pump have to deliver 70m <sup>3</sup> at T.D.H =140m. Pump sitting =109m, Out Diam. of pump should be at most 8" , Well casing diameter = 12" , shut off head not less than 210m. The total length of Motor- Pump Set have to be < 3.5m. <b>Bowl Assembly:</b> Flanged type constructed of close grained cast iron conform to ASTM A48, class 30, free from sand holes, blowholes, or other faults, capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater. Bowls (waterways) have to be internally	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	porcelain coated and externally with backed epoxy coating. All bowls have to be fitted with sleeve type bearings of bronze alloy C89835. <b>Impellers:</b> The impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type , free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced and must be securely fastened to the bowl shaft. <b>Motor Adapter:</b> The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron or approved equal and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings on the screen shall not be more than 75% of the minimum opening of the water passage through the bowl or the impeller. <b>Shaft:</b> The pump shaft shall be of ASTM A 582 type 416 stainless steel with diameter>32mm. It shall be precision ground and polished with optimum surface finish. <b>Coupling:</b> The shaft coupling shall be of stainless steel and be capable of transmitting the total torque and total thrust of the bowl assembly in either direction of rotation. <b>Submersible Electric Motor:</b> A suitable thrust bearing shall be incorporated in the lower end of the motor adequate to receive the entire hydraulic thrust load of the pump unit plus the weight of the rotating parts regardless of the direction of rotation. The motor leads shall be of sufficient length so that they may be spliced above the bowl assembly and the leads shall be protected by a type 304				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	stainless steel cable guard held in place with stainless steel banding. As the motor lead exit the top of the cable guard it shall be properly protected to prevent damaging or cutting the lead by the cable guard material. The <b>motor leads</b> have to be connected with a <b>three phase flat power cable</b> (copper wires) with a cross section area of each wire of <b>25mm<sup>2</sup></b> . The connection of the motor leads with the cable should be fully isolated from the water by a proper water resistant material.				
3	<b>Discharge Pipe (Column Pipe):</b> Supply, install and operate a discharge column pipe. The discharge pipe shall be ASTM A53 grade B steel pipe and the weight shall be not less than Schedule 40 and coated with backed epoxy from inside and outside in accordance with AWWA C210-97 in 3 meters length segments and connected by threaded sleeve type steel coupling. The ends of the pipes shall have ANSI B1.20.1 standard tapered pipe threads. Diameter of the discharge pipe is 6".	LM	109		
4	<b>Surface Plate (Discharge Head Plate):</b> the surface plate shall be fabricated of steel with at least 800x800x30mm in dimension and totally coated by packed epoxy. The plate shall incorporate a long radius elbow with 6" diameter welded securely to a ANSI Class 150 flange and shall rigidly support the total weight of the motor, bowl assembly, discharge pipe, cable, and column of water. The plate should have a hole with adequate size to accommodate the electric power cable supplying the submersible motor and it must have (2) openings for the two P.V.C pipes each with	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	25mm diameter.				
5	<b>Three Phase Power Cable:</b> Supply a flat flexible power cable with 3 copper wires each of a net copper cross sectional area of <b>25mm<sup>2</sup></b> . Wires have to be isolated by PVC material. Maximum permissible continuous conductor temperature 70°C. This cable have to be properly connected with the 3 leads of the submersible motor, the connection joint point have to be fully isolated from water by proper water resistant material. The cable will have to be tied to the riser pipe in 2m distances using suitable clamps and its end to the three phase AC voltage terminals (3x400V, 50Hz) in the electric control cabinet.	LM	125		
6	<b>Electric Power Control, Switch and Distribution Board:</b> Supply, Install, Connect and complete in place and perfect operational manner a main power control switch and distribution board built in a dust tight, water proof IP65 steel sheet cabinet (2 mm thick) rust free, factory made with front door and lock (gray thermally painted). The top of this cabinet is 180cm from floor slab on grade and its base is protected by 10cm cement block. Al wiring, bus bars and marking terminal unit and electric company kWh meter are to be in this power cabinet. On/Off push button, emergency button, warning lamps, alarm, 3 analog ammeters and 1 volt meter (phase voltage indication with selector switch). For measuring the input ampere and volt of the motor have to be installed on the front door of the cabinet. A high quality three phase change over power switch rated at nominal voltage / current of	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	3x400V/3x100A have to be installed in the cabinet to allow supplying the load from the electric grid or from a diesel electric generator. Cabinet's body must be connected to earthing electrodes. Cabinet dimensions have to be not less than 100 X 80 X 40 cm. the cabinet should include a high quality <b>soft starter</b> (appropriate for the motor power 65HP) with all protection relays timers, Fuses, circuit breakers, bypass contactors and any other components necessary for protection of the 3 phase motor and the pump according to the attached technical drawings and the engineer's directions. All circuit breakers must be secured through thermal and magnetic combination action while over load relays should be of thermal type with calibration adjustable between 0.8 and 1.5 of the motor full current. Soft starter, relays, circuit breakers, contactors, switches, timers and any other protection components should be of best quality as Merlin Gerlin, Moeller, Schneider, ABB or approved equivalent types. Transformer 220/ 2x12Vrms to be included. <b>In addition the cabinet should include at least the followings: Over load protection</b> adjustable (0.8 – 1.5)x Nominal motor current, short circuit capacity 4PX20 KA surge arrestors of replicable type. <b>Protection relays</b> for: phase failure, phase sequence, short circuit and earth leakage. <b>Digital multimeter- screens</b> to be installed on the front door of the cabinet for presentation of the measuring variables : V, A, kW, Hz, PF , Water level above the pump in (m) and pressure in bar at the well opening. <b>Warning lamps</b> for soft start fault, over load, No flow, High pressure, Low pressure and Low water level.				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	<b>Capacitor bank</b> with discharge resistors, reactors and contactor operating at 3phase 400 V, 50 Hz to improve the power factor of the motor to achieve 0.95 lagging according to drawings and engineers directions (capacity of capacitor bank have to be fixed by considering 400V ). <b>Earthing unit:</b> Earth equalizer, Comprising C14 box, Copper B.B. 70 mm <sup>2</sup> foundation line 3 earth electrodes (D> 19 mm, L = 1.5m) and any other necessary material or components to achieve an earthing resistance of $R_{Earth} < 1.5 \text{ Ohm}$ for the whole pumping station. Earthing unit should be properly connected to the control power cabinet in the well house and to other components according to the technical drawings.				
7	Supply and install a combination set of low and high <b>pressure switches</b> 1-16 bars and connect them with the control panel unit. Price includes all required cables and accessories for the combination set in accordance with specifications, drawings and/or engineer's directions.	LS	1		
8	Supply and install an <b>Electric flow switch</b> (16 bars) suitable for 6" pipe powered by a 24 V source, including all cables and accessories to connect it to the control unit in accordance with technical specifications, drawings and/or engineers directions.	LS	1		
9	Supply and install two <b>PVC Pipe sleeves 25mm</b> in diameter, type UPVC schedule 40 to be used as sleeves in the well for the level measurements and level monitoring using a sensor and a cable to be connected to the control board. UPVC pipes shall be perforated below static water surface elevations and bottom ends plugged.	LM	230		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	Perforation shall be at least 6 mm holes in distance of 15 cm above the plugged end of each pipe. The UPVC pipes shall be appropriately attached in place to column pipe using suitable clamps every 2 meters or less. The UPVC pipes shall extend into the discharge head plate according to engineer's directions.				
10	Supply and install a <b>Digital water level sensor</b> (Out Diam.=<19mm), 4-20 mA with all necessary components for proper operation and the cable which includes the wires and thin pipe. The sensor will have to be connected via its cable with the electric board to measure continuously the water level above the pump. The measured value in meters should be shown digitally on the front panel of the control cabinet in accordance with technical specifications and/or engineer's directions. This water level sensor have to be used for protection of the motor against dry running by switching the motor OFF if the water level above the pump sinks to a definite adjustable limit.	LS	1		
11	Supply and install <b>6" Digital Water Flow Meter</b> ( 16 bars) complete with digital display LCD, wires, flanges, gaskets, bolts , nuts and any other necessary components for proper operation. All according to ISO standards and in accordance with drawings and engineer's directions	LS	1		
12	Supply and install <b>6" Strainer</b> upstream (16 bar) the water meter in accordance with technical specifications, drawings and engineer's directions	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
13	Supply and install <b>6" One way valve</b> (check valve, 16 bars) in accordance with attached technical specifications, drawings and engineer's directions	LS	1		
14	<b>6" Rising stem gate valve</b> for 16 bars complete with flanges, gaskets, bolts and nuts according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
15	Supply and install a common <b>Analog pressure gage</b> (0- 20 bar) on the discharge pipe directly near the well opening as shown in drawings.	LS	1		
16	Supply and install a <b>Digital pressure measuring sensor</b> to measure digitally the pressure in the discharge pipe near the well opening. The digital measurement in bar should be indicated at the front panel of the control cabinet. All work is in accordance with technical specifications, drawings and engineers directions	LS	1		
17	Supply and install <b>2" Gate and air release valves</b> in accordance with the technical specifications, drawings and engineer's directions.	LS	1		
18	Supply and install a <b>2" Gate valve and pressure relief valve</b> with adjustable setting to allow pressure relief when pressure exceeds an adjustable setting in accordance with technical specifications, drawings and engineer's directions	LS	1		
19	Supply and install <b>6" Steel pipe 4mm</b> thick internally and externally coated with backed epoxy for connecting pump, with meters, valves and old network in an around the pump station in accordance with technical specifications, drawings and engineer's directions. Price includes all jacks, accessories, materials and supports	LM	12		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	needed to connect and support the pipe in place and its connections.				
20	<b>6" Flanged dresser</b> complete for (16 bars) with two tie rods 60 cm. long diameter of 5"/8 and 4 ears for each dresser.	LS	2		
21	<b>Wash Out:</b> Executing the main wash out end as drawings. The work shall be complete according to the contract conditions, technical specifications and the engineer approval. Price shall include all work and material needed including a heavy duty 3" flanged gate valve (16 bars), piping and all accessories, fittings and joints needed as shown in drawings.	LS	1		
22	<b>Lighting Fixtures and accessories :</b> Work for lighting fixtures is to include supply of the fixtures specified, installation of same connection, wiring, commissioning, lamps, tubes, starter louvers, duct and all other details, for a complete lighting system in the station. All wiring shall be placed in PVC hoses installed in the walls and covered with plaster. <b>Parts to be installed include the following:</b>				
23	Type (A) 2x36w fluorescent surface mounted light fixture IP65 according to technical drawings.	LS	2		
24	Type (B) 1x20w emergency 10 hours duration lighting fixture according to technical drawings.	LS	1		
25	Type (c) 200w halogen outdoor light fixture IP54 according to technical drawings.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

<b>Burhan Dhamen Well # 19-17/23 ( Aljftlik )</b>					
<b>A.</b>	<b>Item</b>	<b>Unit</b>	<b>Qty</b>	<b>Unit Price USD</b>	<b>Total USD</b>
26	A single phase 220 volts power outlet water resistant according to technical drawings.	LS	2		
27	A three phase 380V power outlet water resistant according to drawings.	LS	1		
28	Supply and install internal and external plastering for walls, columns, arches drop beams, softies of slabs & beams, shaft walls and ceiling composed of 3 coats, a bond coat 1cement:3 sand, base coat 1:4, and finish coat 1:5. The price includes material and labor and subject to Engineer Approval.	SM	70		
29	Supply and install emulsion paint (internal and external) for plastered walls composed of one coat of Tambour fill, 2 coats of putty and 3coats of emulsion.	SM	140		
30	Supply and apply polycid paint for ceiling and walls wherever required, composed of one coat of Tambour fill and minimum 2 coats of polycid.	SM	35		
31	Paint all existing metal works (one door) through supplying and applying 2 coats of antirust primer, Tambour synthetic patch putty and 3 coats of Tambour superlac. All metals should be sand cleaned and all rust removed before painting.	LS	1		
32	Supply and cast Reinforced concrete B250 for floor slab with minimum thickness 10cm, the price includes supply and install steel reinforcement 8mm bars @20 cm c/c in both directions .The price shall include surface leveling, mechanical finishing, curing and all related works and subject to Engineer's Approval.	CM	3		
33	Fabricate supply and install one steel door with double steel sheets 2mm thick complete with all accessories such as heavy duty roller hinges, water flushing, Wally	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	cylinder locks, and all fixing accessories, The price includes supply and apply 2 coats of anti rust primer, Tambour synthetic patch putty and 3 coats of Tambour superlac. Shop drawings must be submitted and approved before fabrication. Dimensions are 220 cm x 140cm, the door to be two panels. Price includes cutting in the concrete wall to increase the height of the door and plastering around the door for a smooth and straight look of door.				
34	Supply and install 2 <b>Metal Windows with screens</b> with dimensions shown in drawings. Windows should be at least 2mm thick steel panels with frames formed of metal angles of at least 3cmx3cmx2mm. Screens should be galvanized wires at least 0.5 mm thick, screen openings 1x1 cm, reinforced by steel plates of 2 cmx 2mm in both directions. Spacing between reinforcing plates shall not exceed 30 cm in both horizontal and vertical directions. Steel plates shall be placed on both sides of the screen and welded to the frame of the window which should be formed of steel angles of 3cmx3cmx2mm or more. All steel work shall be painted with one coat of base coat and minimum of 2 coats of superlac paint.	LS	2		
35	Supply and install <b>Metal door for existing well opening 1x1 m</b> . The door should be at least 2mm thick steel sheets with frames formed of metal angles of at least 3cmx3cmx2mm. All steel work shall be painted with one coat of base coat and minimum of 2 coats of superlac paint.	LS	1		
	<b>Subtotal</b>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	<b>Provisional items</b>				
1	Diesel –Electric Generator: The power of the generator must be “prime rating” and should be fully matched with the electric load. It means it should be capable to start and operate efficiently the related vertical induction motor driving the pump correctly through the related control board respecting the features of the available soft start and overload protection. The kVA rating of the diesel generator set must be matched with the offered vertical induction motor and enough to deliver its high starting current. The Diesel-Electric Generator Set should be a robust unit engineered to operate in remote and harsh environment. It must be of highly resistant construction, water cooled, naturally aspirated, close circuit breathing, excellent maintenance access, exhaust silencing system enclosed for operator safety and fully lockable with common key for extra safety and security. Diesel motor, three phase generator, control panel and battery should constitute one unit built on one strong stable steel structure that can be safely moved. The diesel electric generator set should have also the following specifications : *Output voltage : Sinusoidal three phase 400V , 50Hz, *Engine speed : 1500 revolution per minute, *Rated power : (Prime) apparent output power of the three phase electric generator ( Recommended is : 120 kVA@400V , 50Hz )should be appropriate to start and operate efficiently the related submersible induction motor driving the pump via the control panel which includes the soft start and overload protection. Rated kVA, Rated	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Burhan Dhamen Well # 19-17/23 ( Aljftlik )					
A.	Item	Unit	Qty	Unit Price USD	Total USD
	Current ,Max Current of the electric generator and the mechanical output power of the selected Diesel Engine driving the generator(in Horse Power) have to be clearly identified in the offer), *Voltage regulation : +/- 0.5, *Total harmonic content : < 4%, *Battery: 12VDC with at least 100 Ah –capacity (ground is negative), battery charge regulator with current Icharge >40A, *Control panel of the diesel electric generator set : should include main power switch and all necessary protection devices and instrumentation to measure and indicate at least the voltage, the current, frequency and the temperatures of the generator set. *Insulation class : H and ingress protection IP23, *Maximum temperature of the installation site : 46 °C, *Cooling system : Water (Pump type : centrifugal), *Fuel : Diesel , fuel filter type is replaceable. * Fuel tank: Base fuel tank and external fuel tank with automatic fuel transfer System are required. *Air filter type is replaceable				
	<b>Provisional Items Subtotal</b>				
	<b>Total Amount</b>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
1	<b>Dismantling:</b> Carefully dismantle the existing submersible pump, motor, pipes and any other parts inside and outside the well and pump room (within the extents of the work area needed to complete the following works) will have to be removed and delivered as instructed by the engineer. The work shall also include all needed equipment (hoist, tripod, crane, electric generator... etc.) to complete the work as required. The work shall be completed according to the contract conditions, technical specifications and the engineer's approval.	LS	1		
2	<b>Submersible Motor Pump Set:</b> Supply, install and operate a new submersible pump with all the accessories it needs to get a working system. The submersible pump will have to be with none-return flow valve, pump efficiency > 70% at design point, driven by a submersible three phase induction motor with rated power =75 Horse Power, rated input voltage (380V-415Vrms), 50Hz, max speed n= 3000rpm, PF > 0.87 and motor efficiency>90%. This induction motor should be fully appropriate to be driven by a variable frequency drive (Inverter) specified below. The pump have to deliver 70m <sup>3</sup> at T.D.H = 200m. Pump sitting = 210m, Out Diam. of pump should be=< 8", Well casing diameter = 12" , shut off head of pump should be not less than 280m. <b>Bowl Assembly:</b> Flanged type constructed of close grained cast iron conform to ASTM A48, class 30, free from sand holes, blowholes, or other faults, capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater. Bowls (waterways) have to be internally	LS	1		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	porcelain coated and externally with backed epoxy coating. All bowls have to be fitted with sleeve type bearings of bronze alloy C89835. <b>Impellers:</b> The impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type, free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced and must be securely fastened to the bowl shaft. <b>Motor Adapter:</b> The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron or approved equal and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings on the screen shall not be more than 75% of the minimum opening of the water passage through the bowl or the impeller. <b>Shaft:</b> The pump shaft shall be of ASTM A 582 type 416 stainless steel with diameter>32mm. It shall be precision ground and polished with optimum surface finish. <b>Coupling:</b> The shaft coupling shall be of stainless steel and be capable of transmitting the total torque and total thrust of the bowl assembly in either direction of rotation. <b>Submersible Electric Motor:</b> A suitable thrust bearing shall be incorporated in the lower end of the motor adequate to receive the entire hydraulic thrust load of the pump unit plus the weight of the rotating parts regardless of the direction of rotation. The motor leads shall be of sufficient length so that they may be spliced above the bowl assembly and the leads shall be protected by a type 304				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	stainless steel cable guard held in place with stainless steel banding. As the motor leads exit the top of the cable guard it shall be properly protected to prevent damaging or cutting the lead by the cable guard material. The <b>motor leads</b> have to be connected with a flat <b>three phase power cable</b> with a cross section area of each wire <b>of 35mm<sup>2</sup></b> . The connection of the motor leads with the cable should be fully isolated from the water by a proper water resistant material.				
3					
4	<b>Discharge Pipe (Column Pipe):</b> Supply, install and operate a discharge column pipe of 5" diameter. The discharge pipe shall be ASTM A53 grade B steel pipe and the weight shall be not less than Schedule 40 and coated with backed epoxy from inside and outside in accordance with AWWA C210-97 in 3 meters length segments and connected by threaded sleeve type steel coupling. The ends of the pipes shall have ANSI B1.20.1 standard tapered pipe threads.	LM	210		
5	<b>Surface Plate (Discharge Head Plate):</b> the surface plate shall be fabricated of steel with at least 800x800x30mm in dimension and totally coated by packed epoxy. The plate shall incorporate a long radius elbow with 5" diameter welded securely to ANSI Class 150 flange and shall rigidly support the total weight of the motor, bowl assembly, discharge pipe, cable, and column of water. The plate should have a hole with adequate size to accommodate the electric power cable supplying the submersible motor and it must have (2) openings for the two PVC pipes each with	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	25mm diameter.				
6	<b>Three Phase Power Cable</b> : Supply and install a flexible copper flat three phase power cable consisting of 3 isolated copper wires each with a net cross section area of <b>35mm<sup>2</sup></b> . The 3 wires are isolated with PVC material of 3 colors. Maximum permissible continuous conductor temperature 70°C. The cable should be properly connected with the leads of the submersible three phase motor from one side ( Connection Joint have to be fully isolated with a proper water resistant material) and with the three phase voltage source (400V, 50Hz) in the control cabinet from the other side. The cable should be fastened to the discharge pipe and tied to it properly with suitable clamps in distances of 2 meters.	LM	220		
7	<b>Electric Power Control, Switch and Distribution Board</b> : Supply, Install, Connect and complete in place and perfect operational manner a main power control switch and distribution board built in a dust tight, water proof IP65 steel sheet cabinet (2mm thick) rust free, factory made with front door and lock (gray thermally painted). The top of this cabinet is 180cm from floor slab on grade and its base is protected by 10cm cement block. All wiring, bus bars and marking terminal unit and electric company kWh meter are to be in this power cabinet. On/Off push button, emergency button, warning lamps, alarm, 3 analog ammeters and 1 volt meter (phase voltage indication with selector switch) for measuring the input ampere and volt of the	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	<p>motor have to be installed on the front door of the cabinet. Cabinet's body must be connected to earthing electrodes. Cabinet dimensions have to be not less than 100 X 80 X 40 cm. All protection relays, timers, fuses, circuit breakers, contactors and any other components necessary for protection of the 3 phase motor and the pump should be delivered and installed in the control cabinet according to the attached technical drawings and the engineer's directions. All circuit breakers must be secured through thermal and magnetic combination action while over load relays should be of thermal type with calibration adjustable between 0.8 and 1.5 of the motor full current. Relays, circuit breakers, contactors, timers and any other protection components should be of best quality as Merlin Gerlin, Moeller, Schneider, ABB or approved equivalent. Transformer 220/ 2x12Vrms and any other equipment necessary to secure for the measurements, the control and protection of all system components have to be included in the cabinet. The specified inverter (driving the induction motor) below should be properly built in the control power cabinet. <b>In addition the control cabinet should include at least the followings:</b></p> <p><b>Over load protection</b> adjustable 0.8 – 1.5 Nominal motor current, short circuit capacity 4PX20 KA surge arrestors of replicable type. <b>Protection relays</b> for: phase failure, phase sequence, short circuit and earth leakage. <b>Digital multimeter-screens</b> to be installed on the front door of the cabinet for presentation of the measuring variables : V, A, kW, Hz, PF , Water level above the pump in (m) and</p>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	pressure in bar at the well ground surface level. <b>Warning lamps</b> for inverter fault, over load, No flow, High pressure, Low pressure and Low water level. <b>Earthing unit:</b> Earth equalizer, Comprising C14 box, Copper B.B. 70 mm <sup>2</sup> foundation line 3 earth electrodes (D> 19 mm, L = 1.5m) and any other necessary material or components to achieve an earthing resistance of $R_{Earth} < 1.5 \text{ Ohm}$ for the whole pumping station. Earthing unit should be properly connected to the power cabinet in the well house and to other components according to the technical drawings.				
8	<b>Variable Frequency Drive (Inverter)</b> to be supplied, installed in the Control Cabinet and properly operated with a three phase input voltage (Line to Line) in the range : 380 - 415 Vrms , input frequency 50Hz, the inverter should be appropriate for driving a 75HP- three phase two pole induction motor by variable output voltage (adjustable via output frequency in the range: 380V - 480V) and variable output frequency (user adjustable). Carrier frequency should be user adjustable in the range: 2-15kHz . Allowable voltage fluctuation: -10% -- +10% and allowable frequency fluctuation: -5% -- +5%. The output frequency of the inverter have to be adjustable in such a way that almost V/f remains constant. The inverter should be of high quality, with full wave three phase rectifier, L-C Filter and IGBT bridge, fan cooled with an efficiency not less than 95%. All necessary accessories, equipment and components should be included to secure safe and proper operation of the submersible motor and pump. <b>The contractor is responsible to supply, install and</b>	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	<b>operate a Filter with any additional accessories at NO COST to solve any Harmonics Problems that may be caused by installing the inverter within the system, since such harmonics can damage other equipment connected to the same electric grid.</b>				
9	Supply and install a combination set of low and high <b>pressure switches</b> 1-16 bars and connect them with the control panel unit. Price includes all required cables and accessories for the combination set in accordance with specifications, drawings and/or engineer's directions.	LS	1		
10	Supply and install an Electric flow switch (16 bars) suitable for 6" pipe powered by a 24 V source, including all cables and accessories to connect it to the control unit in accordance with technical specifications, drawings and/or engineers directions.	LS	1		
11	Supply and install two <b>UPVC pipe sleeves 25mm</b> in diameter, schedule 40 to be used as sleeves in the well for the level measurements and level monitoring using a sensor and a cable to be connected to the control board. UPVC pipes shall be perforated below static water surface elevations and bottom ends plugged. Perforation should be at least 6 mm holes at a spacing of 15 cm should be drilled above the plugged end of each pipe. The PVC pipes shall be appropriately attached in place to column pipe using suitable clamps every 2 meters or less. The UPVC pipes shall extend into the discharge head plate.	LM	440		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
12	Supply and install a <b>Digital Water Level Sensor</b> (Out Diam.=<19mm), 4-20 mA with all necessary components for proper operation and the cable which includes the wires and thin pipe. The sensor will be connected via its cable (with enough length>230m) with the electric board to measure continuously the water level above the pump. The measured value in meters should be shown digitally on the front panel of the control cabinet in accordance with technical specifications and/or engineer's directions. This water level sensor have to be also used for protection of the motor against dry running by switching the motor OFF if the water level above the pump sinks to a definite adjustable limit.	LS	1		
13	Supply and install <b>6" Digital water flow meter</b> (16 bars) complete with digital display LCD, wires, flanges, gaskets, bolts, nuts and any other necessary components for proper operation. All according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
14	Supply and install <b>6" Strainer upstream (16 bars)</b> in accordance with technical specifications, drawings and engineer's directions.	LS	1		
15	Supply and install <b>6" One way valve</b> (check valve, 16 bar) in accordance with attached technical specifications, drawings and engineer's directions.	LS	1		
16	<b>6" Rising stem gate valve</b> for 16 bars complete with flanges, gaskets, bolts and nuts according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
17	Supply and install a common <b>Analog pressure gage</b> (0- 20 bars) on the discharge pipe directly near the well opening as shown in the drawings.	LS	1		
18	Supply and install a <b>Digital Pressure Measuring Sensor</b> to measure digitally the pressure in the discharge pipe at the well opening level. The digital measurement in bar should be indicated at the front panel of the control cabinet. All work should be in accordance with technical specifications, drawings and engineers directions.	LS	1		
19	Supply and install <b>2" Gate and air release valves</b> in accordance with technical specifications, drawings and engineer's directions.	LS	1		
20	Supply and install <b>2" Gate and a pressure relief valve</b> with adjustable setting to allow pressure relief when pressure exceeds an adjustable setting in accordance with technical specifications, drawings and engineer's directions.	LS	1		
21	Supply and install <b>6" Steel pipe 4mm</b> thick internally and externally coated with backed epoxy for connecting pump, with meters, valves and old network in and around the pump station in accordance with technical specifications, drawings and engineer's directions. Price includes all jacks, accessories, materials and supports needed to connect and support the pipe in place and its connections.	LM	12		
22	<b>6" Flanged dresser</b> complete for (16 bars) with two tie rods 60 cm. long diameter of 5"/8 and 4 ears for each dresser.	LS	2		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
23	<b>Wash out:</b> Executing the main wash out end as shown in drawings. The work shall be completed according to the contract condition, technical specification and the engineer's approval. Price shall include all work and material needed including a heavy duty 3" flanged gate valve (16 bars) all piping and all accessories, fittings and joints needed as shown in drawings.	LS	1		
	<b>Subtotal</b>				
	<b>Provisional items</b>				
1	<b>Lighting Fixtures and Accessories:</b> Work for lighting fixtures is to include supply of the fixtures specified, installation of same connection, wiring, commissioning, lamps, tubes, starter louvers, duct and all other details, for a complete lighting system in the station. All wiring shall be placed in PVC hoses installed in the walls and covered with plaster. <b>Parts to be installed include the following:</b>				
2	Type (A) 2x36w fluorescent surface mounted light fixture IP65 according to technical drawings.	LS	2		
3	Type (B) 1x20w emergency 10 hours duration lighting fixture according to technical drawings.	LS	1		
4	Type (c) 200w halogen outdoor light fixture IP54 according to technical drawings.	LS	1		
5	A single phase 220 volts power outlet water resistant according to technical drawings.	LS	2		
6	A three phase 380V power outlet water resistant according to drawings.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

<b>Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )</b>					
B	Item	Unit	Qty	Unit Price USD	Total USD
7	Supply and install internal and external plastering for walls, columns, arches drop beams, softies of slabs & beams, shaft walls and ceiling composed of 3 coats, a bond coat 1 cement:3 sand, base coat 1:4, and finish coat 1:5. The price includes material and labor and subject to Engineer Approval.	SM	120		
8	Supply and install emulsion paint for plastered walls composed of one coat of Tambour fill, 2 coats of putty and 3 coats of emulsion.	SM	100		
9	Supply and apply polycid paint for ceiling and walls wherever required, composed of one coat of Tambour fill and minimum 2 coats of polycid.	SM	20		
10	Supply and build hollow concrete blocks 20 cm thick for walls according to specifications and as shown in drawings, the price includes supply and cast B250 concrete lintel 20 cm high for doors and windows and the supply & installation of steel reinforcement 4 bars 12 mm diameter with stirrups (8 mm @ 20 cm c/c). The price includes supply and cast B300 concrete for 6 columns 25x25 cm as shown in drawings & installation of steel reinforcement 6 bars 12 mm diameter with stirrups 8mm @20cm c/c, all related works as per drawings ,specifications and Engineer Approval.	SM	50		
11	Supply and cast Reinforced concrete B250 for floor slab with minimum thickness 10 cm, the price includes supply and install steel reinforcement 8 mm bars @ 20 cm c/c in both directions. The price shall include surface leveling, mechanical finishing, curing and all related works according to drawings and subject to Engineer's	CM	3		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
	Approval.				
12	Supply and cast Reinforced concrete B300 for: 1) Roof slab with minimum thickness 15 cm, the price includes supply and install steel reinforcement 10mm bars @ 15 cm c/c in both directions. 2) Strip footings under walls (50x50 cm), price includes excavation and steel reinforcement as shown in drawings. 3) Reinforced concrete for two columns extended over the roof to be used for maintenance purposes with height of 3 meters, cross section of 25x25 cm, steel reinforcement 6-12mm with stirrups 8mm @ 20 cm c/c as shown in drawings. 4) Columns (25x25 cm) and drop beams (20x35 cm) as shown in drawings with reinforcement as shown in drawings. The price shall include surface leveling, mechanical finishing, curing and all related works according to drawings and subject to Engineer's Approval.	CM	10		
13	Fabricate supply and install a steel door 1.25x2.2 m with double sheet steel sheet 2mm thick complete with all accessories such as heavy duty roller hinges, water flushing, Wally cylinder locks, and all fixing accessories, The price includes supply and apply 2 coats of anti rust primer, Tambour synthetic patch putty and 3 coats of Tambour superlac. Shop drawings must be submitted and approved before fabrication.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Bdullatif Eshtaieh Well #18-18/60 ( Alnasaria )					
B	Item	Unit	Qty	Unit Price USD	Total USD
14	Supply, fabricate and install 3 steel windows 1.1x1.1 meters as shown in drawings. Each window shall include: steel panels for the interior side with thickness at least 2mm and enough reinforcement around panels of at least 2x2 cm steel bars, frame of 3x3 cm angles with a thickness of 2mm. The exterior side of the each window shall be a metal screen window with screens of galvanized wires at least 0.5 mm thick, screen openings 1x1 cm, reinforced by steel plates of 2 cm x 2mm in both directions. Spacing between reinforcing plates shall not exceed 30 cm in both horizontal and vertical directions. Steel plates shall be placed on both sides of the screen and welded to the frame of the window which should be formed of steel angles of 3cmx3cmx2mm or more. All steel work shall be painted with one coats of base coat and minimum of 2 coats of superlac paint.	LS	3		
	<b>Provisional Items Subtotal</b>				
	<b>Total Amount</b>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
1	<b>Dismantling:</b> Carefully dismantle the existing vertical turbine pump unit, motor, pipes and any other parts inside and outside the pump room (within working area) have to be removed and delivered as instructed by the engineer. The work shall also include all needed equipment (hoist, tripod, crane, electric generator... etc.) to complete the work as required. The work shall be completed according to the contract conditions, technical specifications and the engineer's approval.	LS	1		
2	<b>Vertical Turbine :</b> Supply, transport, install and operate at site a vertical turbine pump with none return valve and all the accessories it needs to get a working system as described in attached technical specifications, well water is brackish and used mainly for irrigation. The requested pump characteristics : $Q = 80 \text{ m}^3/\text{hr}$ at T.D.H=100m at best efficiency, Speed (n) = 1500 r.p.m. Recommended O.D of pump < 8.25", Shut Off head not less than 145m . Min. efficiency not less than 70% at design point. Well Casing Diameter = 10", Pump sitting = 57m.b.g.l, <b>Vertical Turbine Assembly:</b> Bowls-Cast Iron A48 Cl.30, internally porcelain coated, externally coated with backed epoxy. Impellers should be constructed from ASTM B584 Silicon Bronz or stainless steel (enclosed type in both cases). Bowl Bearings- High-lead Tin bronze B584 C937. Turbine Shaft Stainless steel-A582 type 416, with diameter = 32 mm. Bowl Bolts-SS A276 Type 316. Suction Strainer-SS A276 type 316	LS	1		
3	<b>Column Pipe:</b> Supply, install and operate a discharge column pipe. The discharge	LM	57		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	pipe shall be ASTM A53 grade B steel pipe and the weight shall be not less than Schedule 40 and coated with backed epoxy from inside and outside in accordance with AWWA C210-97 in 3 meters length segments and connected by threaded sleeve type steel coupling. The ends of the pipes shall have ANSI B1.20.1 standard tapered pipe threads. Diameter of the discharge column pipe is 6".				
4	<b>Discharge Head Plate:</b> Supply and install a suitable discharge head base plate UNS G 10200-ST.37 plate dimensions 1000-1000-20 mm, coated with backed epoxy, matched to the discharge head. With 2 holes each of 40mm diam. Plate to be fixed in the concrete foundation of the well. The steel plate shall be welded with the well casing.	LS	1		
5	<b>Discharge Head :</b> Supply and install a discharge head with 90/6" steel elbow, Cast Iron A48 Cl.30 6"-6" discharge flange dimensions according to ASA 150 internally and externally coated with baked epoxy, including Stuffing box and SS 17-4PH head shaft complete with all necessary parts and fittings needed to connect it to the top of existing 6" rising pipes column and vertical electric motor and it must have (2) openings for the 25mm P.V.C pipes and high pressure gland packing sealing arrangement, with Burgmann Buraflon type PTFE impregnated robes shall be installed between the sole plate and the discharge head.	LS	1		
6	<b>Electric Motor:</b> Supply, install and operate a vertical hollow shaft 3phase induction motor with enclosed fan cooling (squirrel cage) n= 1500 RPM, 50 Horse Power,	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	380Vrms, 50Hz, Efficiency>90%, P.F>0.87, Thrust Load=1.5xRated Load, water proof with high protection degree IP55 and insulation class F, including none –reverse ratchet with all protections needed, suitable to drive the above mentioned pump without over loading, with thermistors, space heater (max temp. at well site 46°C), drive shaft, nut and key...etc, and all fittings. The price includes the electric cable and all necessary accessories for connection with control cabinet and installation. This motor will be supplied by a three phase inverter with adjustable variable voltage and frequency output as specified below.				
7	<b>Stainless Steel Shaft</b> : Supply and install ASTM A582 type 416 stainless steel shaft 32 mm in diameter (3 m pieces)- threaded ASTM A582 type 416 hardened and tempered, heat treated and polished H08 shafts, including ASTM A582 type 416 SS threaded coupling(extra strong). Bearing retainer-threaded bronze B584-836 retainers, including Neoprene rubber C462-65 bearing and any other parts needed to complete the work.	LM	57		
8	<b>Electric Power Control, Switch and Distribution Board:</b> Supply, Install, Connect and complete in place and perfect operational manner a main power control switch and distribution board built in a dust tight, water proof IP65 steel sheet cabinet (2mm thick) rust free, factory made with front door and lock (gray thermally painted). The top of this cabinet is 180cm from floor slab on grade and its base is protected by 10cm cement block. All wiring, busbars and marking terminal unit and electric	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	company kWh meter are to be in this power cabinet. On/Off push button, emergency button, warning lamps, alarm, 3 analog ammeters and 1 volt meter (phase voltage indication with selector switch). For measuring the input ampere and volt of the motor have to be installed on the front door of the cabinet. Cabinet's body must be connected to earthing electrodes. Cabinet dimensions have to be not less than 100 X 80X 40 cm. the cabinet should include a soft starter (appropriate for the motor power) with all protection relays timers, Fuses, circuit breakers, bypass contactors and any other components necessary for protection of the 3 phase motor and the pump according to the attached technical drawings and the engineer's directions. All circuit breakers must be secured through thermal and magnetic combination action while over load relays should be of thermal type with calibration adjustable between 0.8 and 1.5 of the motor full current. Relays, circuit breakers, contactors, timers and any other protection components should be of best quality as Merlin Gerlin, Moeller, Schneider, ABB or approved equivalent. Transformer 220/ 2x12Vrms to be included. The above specified variable frequency inverter has to be installed in this control cabinet <b>In addition the cabinet should include at least the followings: Over load protection</b> adjustable 0.8 – 1.5 Nominal motor current, short circuit capacity 4PX20 KA surge arrestors of replicable type. <b>Protection relays</b> for: phase failure, phase sequence, short circuit and earth leakage. <b>Digital multimeter- screens</b> to be installed on the front door of the cabinet for presentation of the measuring variables :				



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	V, A, kW, Hz, PF , Water level above the pump in (m) and pressure in bar at the well ground surface level. <b>Warning lamps</b> for soft star fault, over load, No flow, High pressure, Low pressure and Low water level. <b>Capacitor bank</b> with discharge resistors, reactors and contactor operating at 3 phase 400 V, 50 Hz to improve the power factor of the motor to achieve 0.95 lagging according to drawings and engineers directions (capacity of the bank will be fixed by considering 400V ). <b>Earthing unit:</b> Earth equalizer, Comprising C14 box, Copper B.B. 70 mm <sup>2</sup> foundation line 3 earth electrodes (D> 19 mm, L = 1.5m) and any other necessary material or components to achieve an earthing resistance of $R_{Earth} < 1.5 \text{ Ohm}$ for the whole pumping station. Earthing unit should be properly connected to the power cabinet in the well house and to other components according to the technical drawings.				
9	<b>Variable Frequency Drive (Inverter)</b> to be supplied , installed in the Control Cabinet and properly operated with a three phase input voltage (Line to Line) in the range : 380 - 415 Vrms , input frequency 50Hz, the inverter should be appropriate for driving a 50HP- three phase two pole induction motor by variable output voltage ( adjustable via output frequency in the range: 380V - 480V) and variable output frequency (user adjustable). Carrier frequency should be user adjustable in the range: 2-15kHz. Allowable voltage fluctuation: -10% -- +10% and allowable frequency fluctuation : -5% -- +5% . The output frequency of the inverter have to be adjustable in such a way that almost V/f remains constant. The inverter should be	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	of high quality, with full wave three phase rectifier, L-C Filter and IGBT bridge, fan cooled with an efficiency not less than 95%. All necessary accessories, equipment and components should be included to secure safe and proper operation of the vertical motor and pump. <b>The contractor is responsible to supply, install and operate a Filter with any additional accessories at NO COST to solve any Harmonics Problems that may be caused by installing the inverter within the system, since such harmonics can damage other equipment connected to the same electric grid.</b>				
10	Supply and install a combination set of low and high <b>pressure switches</b> 1-16 bars and connect them with the control panel unit. Price includes all required cables and accessories for the combination set in accordance with specifications, drawings and/or engineer's directions.	LS	1		
11	Supply and install an <b>Electric flow switch</b> suitable for 6" pipe powered by a 24 V source, including all cables and accessories to connect it to the control board in accordance with technical specifications, drawings and/or engineers directions.	LS	1		
12	Supply and install two <b>UPVC pipe sleeves</b> 25mm in diameter, type UPVC-Schedule 40 to be used as sleeves in the well for the level measurements and level monitoring using a sensor and a cable to be connected to the control board. UPVC pipes shall be perforated below static water surface elevations and bottom ends plugged. Perforations should be at least 6 mm holes at spacing of 15 cm should be drilled	LM	124		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	above the plugged end of each pipe. The UPVC pipes shall be appropriately attached in place to column pipe using suitable clamps every 2 meters or less. The UPVC pipe shall extend into the discharge head plate according to engineer's directions.				
13	Supply and install in one of the UPVC pipes a <b>Digital Water Level Sensor</b> ( Out Diam.=<19mm), 4-20 mA with all necessary components for proper operation and the cable which includes the wires and thin pipe . The sensor will be connected via its cable (with enough length >75m) with the electric board to measure continuously the water level above the pump. The measured value in meter should be shown digitally on the front panel of the control cabinet in accordance with technical specifications and/or engineer's directions. This water level sensor have to be also used for protection of the motor against dry running by switching the motor OFF if the water level above the pump sinks to a definite adjustable limit.	LS	1		
14	Supply and install <b>6" Digital water flow meter</b> (16 bar) complete with digital display LCD, wires, flanges, gaskets, bolts, nuts and any other necessary components for proper operation. All according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
15	Supply and install <b>6" Strainer</b> (16bars) upstream the water meter in accordance with technical specifications, drawings and engineer's directions.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
16	Supply and install <b>6" One way valve</b> (check valve, 16 bar) in accordance with attached technical specifications, drawings and engineer's directions.	LS	1		
17	<b>6" Rising stem gate valve</b> for 16 bar complete with flanges, gaskets, bolts and nuts according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
18	Supply and install a common <b>Analog pressure gage</b> (0- 20 bar) on the discharge pipe directly near the well opening as shown in the drawing.	LS	1		
19	Supply and install a <b>Digital pressure measuring sensor</b> to measure digitally the pressure in the discharge pipe near the well opening next to the analog pressure gage. The digital measurement in bar should be indicated at the front panel of the control cabinet. All work is in accordance with technical specifications, drawings and engineers directions.	LS	1		
20	Supply and install <b>2" Gate and air release valves</b> in accordance with technical specifications, drawings and engineer's directions.	LS	1		
21	Supply and install <b>2" Gate valve and a pressure relief valve</b> with adjustable setting to allow pressure relief when pressure exceeds an adjustable setting in accordance with technical specifications, drawings and engineer's directions	LS	1		
22	Supply and install <b>6" Steel pipe 4mm thick</b> internally and externally coated with backed epoxy for connecting pump, with meters, valves and old network in an around the pump station in accordance with technical specifications and engineer's	LM	12		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	directions.				
23	<b>6" Flanged Dresser</b> complete for (16 bar) with two tie rods 60 cm. long diameter of 6"/8 and 4 ears for each dresser.	LS	2		
24	<b>Wash Out:</b> Executing the main wash out end as drawings. The work shall be complete according to the contract conditions, technical specifications and the engineer approval. Price shall include all work and material needed including a heavy duty 3" flanged gate valve (16 bars), piping and all accessories, fittings and joints needed as shown in drawings.	LS	1		
25	<b>Cooling Tank</b> :Supplying, transporting, delivering and fixing inside the well room or on the roof of the well building 1500 liter PVC tank with suitable steel base and anchors with all required fittings (floats, valves, pipes ,...etc.) for cooling of shaft bearings. The work shall be complete according to the contract conditions, technical specifications, technical drawings and the engineer approval.	LS	1		
	<b>Subtotal</b>				
	<b>Provisional items</b>				
1	<b>Lighting Fixtures</b> and Accessories: Work for lighting fixtures is to include supply of the fixtures specified, installation of same connection, wiring, commissioning, lamps, tubes, starter louvers, duct and all other details, for a complete lighting system in the station. All wiring shall be placed in PVC hoses installed in the walls and covered with				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	plaster. <b>Parts to be installed include the following:</b>				
2	Type (A) 2x36w fluorescent surface mounted light fixture IP65 according to technical drawings.	LS	2		
3	Type (B) 1x20w emergency 10 hours duration lighting fixture according to technical drawings.	LS	1		
4	Type (c) 200w halogen outdoor light fixture IP54 according to technical drawings.	LS	1		
5	A single phase 220 volts power outlet water resistant according to technical drawings.	LS	2		
6	A three phase 380V power outlet water resistant according to drawings.	LS	1	100	100
7	Supply and install internal and external plastering for walls, columns, arches drop beams, softies of slabs & beams, shaft walls and ceiling composed of 3 coats, a bond coat 1cement:3 sand, base coat 1:4, and finish coat 1:5. The price includes material and labor and subject to Engineer Approval.	SM	120		
8	Supply and install emulsion internal and external paint for plastered walls composed of one coat of Tambour fill, 2 coats of putty and 3 coats of emulsion.	SM	100		
9	Supply and apply polycid paint for ceiling and walls wherever required, composed of one coat of Tambour fill and minimum 2 coats of polycid.	SM	20		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
10	Supply and build hollow concrete blocks 20 cm thick for additional walls according to specifications and as shown in drawings, the price includes supply and cast B200 concrete lintel 20 cm high for doors and windows and the supply & installation of steel reinforcement 4 bars 12 mm diameter with stirrups (8 mm @ 20 cm c/c). The price includes supply and cast B300 concrete for 6 columns 25x25 cm as shown in drawings & installation of steel reinforcement 6 bars 12 mm diameter with stirrups 8mm @20cm c/c, all related works as per drawings ,specifications and Engineer Approval.	SM	50		
11	Supply and cast Reinforced concrete B250 for floor slab with minimum thickness 10cm, the price includes supply and install steel reinforcement 8mm bars @ 20 cm c/c in both directions .The price shall include surface leveling, mechanical finishing, curing and all related works and subject to Engineer's Approval.	CM	3		
12	Supply and cast Reinforced concrete B300 for: 1) Roof slab with minimum thickness 15 cm, the price includes supply and install steel reinforcement 10 mm bars @ 15 cm c/c in both directions. 2) Strip footings under walls (50x50 cm), price includes excavation and steel reinforcement as shown in drawings. 3) Reinforced concrete for two columns extended over the roof to be used for maintenance purposes with height of 3 meters, cross section of 25x25 cm, steel reinforcement 6-12mm with stirrups 8mm @ 20 cm c/c as shown in drawings. 4) Columns (25x25 cm) and drop beams (20x35 cm) as shown in drawings with reinforcement as shown in drawings.	CM	10		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

<b>Badee Younis Well # 19-17/11 ( Marj Ghazal)</b>					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	The price shall include surface leveling, mechanical finishing, curing and all related works according to drawings and subject to Engineer's Approval.				
13	Fabricate supply and install a steel door 1.25x2.2 m with double steel sheets 2mm thick complete with all accessories such as heavy duty roller hinges, water flushing, Wally cylinder locks, and all fixing accessories, The price includes supply and apply 2 coats of anti rust primer, Tambour synthetic patch putty and 3 coats of Tambour superlac. Shop drawings must be submitted and approved before fabrication.	LS	1		
14	Supply, fabricate and install 3 steel windows 1.1x1.1 meters as shown in drawings. Each window shall include: steel panels for the interior side with thickness at least 2mm and enough reinforcement around panels of at least 2x2 cm steel bars, frame of 3x3 cm angles with a thickness of 2mm. The exterior side of the each window shall be a metal screen window with screens of galvanized wires at least 0.5 mm thick, screen openings 1x1 cm, reinforced by steel plates of 2 cm x 2mm in both directions. Spacing between reinforcing plates shall not exceed 30 cm in both horizontal and vertical directions. Steel plates shall be placed on both sides of the screen and welded to the frame of the window which should be formed of steel angles of 3cmx3cmx2mm or more. All steel work shall be painted with one coats of base coat and minimum of 2 coats of superlac paint.	LS	3		
15	Supply and install <b>Metal door for existing well opening 1x1 m</b> . The door should be at least 2mm thick steel sheets with frames formed of metal angles of at least	LS	1		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



*Empowered lives.  
Resilient nations.*

[ITB-2014-260]

Badee Younis Well # 19-17/11 ( Marj Ghazal)					
C.	Item	Unit	Qty	Unit Price USD	Total USD
	3cmx3cmx2mm. All steel work shall be painted with one coat of base coat and minimum of 2 coats of superlac paint.				
	<b>Provisional Items Subtotal</b>				
	<b>Total Amount</b>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
1	<b>Dismantling:</b> Carefully dismantle the existing submersible motor-pump set, pipes and any other parts inside and outside the pump room within the work area will have to be removed and delivered as instructed by the engineer. The work shall also include all needed equipment (hoist, tripod, crane, electric generator... etc.) to complete the work as required. The work shall be completed according to the contract conditions, technical specifications and the engineer's approval.	LS	1		
2	<b>Submersible Motor Pump Set:</b> Supply, install and operate a new submersible pump with all the accessories it needs to get a working system. The submersible pump have to be with none-return flow valve, pump efficiency > 70% at design point, driven by a submersible three phase induction motor with rated power =85 Horse Power, input voltage (380V-415Vrms),50Hz, max speed n= 3000rpm, PF > 0.87 and motor efficiency>90%. The pump have to deliver 130m <sup>3</sup> at T.D.H = 120m. Pump sitting = 87 m, Out Diam. of pump should be< 8" , Well casing diameter = 12" , shut off head not less than 165m. <b>Bowl Assembly:</b> Flanged type constructed of close grained cast iron conform to ASTM A48, class 30, free from sand holes, blowholes, or other faults, capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater. Bowls (waterways) have to be internally porcelain coated and externally with backed epoxy coating. All bowls have to be fitted with sleeve type bearings of bronze alloy C89835.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	<p><b>Impellers:</b> The impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type, free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced and must be securely fastened to the bowl shaft. <b>Motor Adapter:</b> The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron or approved equal and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings on the screen shall not be more than 75% of the minimum opening of the water passage through the bowl or the impeller. <b>Shaft:</b> The pump shaft shall be of ASTM A 582 type 416 stainless steel with diameter &gt;32mm. It shall be precision ground and polished with optimum surface finish. <b>Coupling:</b> The shaft coupling shall be of stainless steel and be capable of transmitting the total torque and total thrust of the bowl assembly in either direction of rotation. <b>Submersible Electric Motor:</b> A suitable thrust bearing shall be incorporated in the lower end of the motor adequate to receive the entire hydraulic thrust load of the pump unit plus the weight of the rotating parts regardless of the direction of rotation. The motor leads shall be of sufficient length so that they may be spliced above the bowl assembly and the leads shall be protected by a type 304 stainless steel cable guard held in place with stainless steel banding. As the motor lead exit the top of the cable guard it shall be properly protected to prevent</p>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	damaging or cutting the lead by the cable guard material. The <b>motor leads</b> have to be connected with a <b>three phase flat power cable</b> (copper wires)with a cross section area of each wire <b>of 25mm<sup>2</sup></b> .The connection of the motor leads with the cable should be fully isolated from the water by a proper water resistant material.				
3	<b>Column Pipe:</b> Supply, install and operate a discharge column pipe. The discharge pipe shall be ASTM A53 grade B steel pipe and the weight shall be not less than Schedule 40 and coated with backed epoxy from inside and outside in accordance with AWWA C210-97 in 3 meters length segments and connected by threaded sleeve type steel coupling. The ends of the pipes shall have ANSI B1.20.1 standard tapered pipe threads. Diameter of the discharge pipe is 6".	LM	87		
4	<b>Surface Plate (Discharge Head Plate):</b> the surface plate shall be fabricated of steel with at least 800x800x30mm in dimension and totally coated by packed epoxy. The plate shall incorporate a long radius elbow with 6" diameter welded securely to ANSI Class 150 flange and shall rigidly support the total weight of the motor, bowl assembly, discharge pipe, cable, and column of water. The plate should have a hole with adequate size to accommodate the electric power cable supplying the submersible motor and it must have (2) openings for the two PVC pipes each with	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	25mm diameter.				
5	<b>Three Phase Power Cable:</b> Supply a flat flexible power cable with 3 copper wires each of a net copper cross sectional area of <b>25mm<sup>2</sup></b> . Wires have to be isolated by PVC material. Maximum permissible continuous conductor temperature 70°C . This cable have to be properly connected with the 3 leads of the submersible motor, the connection joint point have to be fully isolated from water by proper water resistant material. The cable will have to be tied to the riser pipe in 2m distances using suitable clamps and its end to the three phase AC voltage terminals (3x400V, 50Hz) in the electric control cabinet.	LM	125		
6	<b>Electric Power Control, Switch and Distribution Board:</b> Supply, Install, Connect and complete in place and perfect operational manner a main power control switch and distribution board built in a dust tight, water proof IP65 steel sheet cabinet (2mm thick) rust free, factory made with front door and lock (gray thermally painted). The top of this cabinet is 180cm from floor slab on grade and its base is protected by 10cm cement block. Al wiring, bus bars and marking terminal unit and electric company kWh meter are to be in this power cabinet. On/Off push button, emergency button, warning lamps, alarm, 3 analog ammeters and 1 volt meter (phase voltage	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	<p>indication with selector switch). For measuring the input ampere and volt of the motor have to be installed on the front door of the cabinet. A high quality three phase change over power switch rated at nominal voltage / current of 3x400V/3x100A have to be installed in the cabinet to allow supplying the load from the electric grid or from a diesel electric generator. Cabinet's body must be connected to earthing electrodes. Cabinet dimensions have to be not less than 100 X 80 X 40 cm. the cabinet should include a high quality <b>soft starter</b> (appropriate for the motor power 85HP) with all protection relays timers, Fuses, circuit breakers, bypass contactors and any other components necessary for protection of the 3 phase motor and the pump according to the attached technical drawings and the engineer's directions. All circuit breakers must be secured through thermal and magnetic combination action while over load relays should be of thermal type with calibration adjustable between 0.8 and 1.5 of the motor full current. Soft starter, relays, circuit breakers, contactors, switches, timers and any other protection components should be of best quality as Merlin Gerlin, Moeller, Schneider, ABB or approved equivalent types. Transformer 220/ 2x12Vrms to be included. <b>In addition the cabinet should include at least the followings: Over load protection</b> adjustable (0.8 – 1.5)x Nominal motor current, short circuit capacity 4PX20 KA surge arrestors of replicable type. <b>Protection relays</b> for: phase failure, phase sequence, short circuit and earth leakage. <b>Digital multimeter- screens</b> to be installed on the front door of</p>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	the cabinet for presentation of the measuring variables : V, A, kW, Hz, PF , Water level above the pump in (m) and pressure in bar at the well opening. <b>Warning lamps</b> for soft start fault, over load, No flow, High pressure, Low pressure and Low water level. <b>Capacitor bank</b> with discharge resistors, reactors and contactor operating at 3phase 400 V, 50 Hz to improve the power factor of the motor to achieve 0.95 lagging according to drawings and engineers directions (capacity of capacitor bank have to be fixed by considering 400V ). <b>Earthing unit:</b> Earth equalizer, Comprising C14 box, Copper B.B. 70 mm <sup>2</sup> foundation line 3 earth electrodes (D> 19 mm, L = 1.5m) and any other necessary material or components to achieve an earthing resistance of R <sub>Earth</sub> <1.5 Ohm for the whole pumping station. Earthing unit should be properly connected to the control power cabinet in the well house and to other components according to the technical drawings.				
7	Supply and install a combination set of low and high <b>Pressure switches</b> 1-16 bars and connect them with the control panel unit. Price includes all required cables and accessories for the combination set in accordance with specifications, drawings and/or engineer's directions.	LS	1		
8	Supply and install an <b>Electric flow switch</b> (16 bars )suitable for 6" pipe powered by a 24 V source, including all cables and accessories to connect it to the control unit in accordance with technical specifications, drawings and/or engineers directions.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
9	Supply and install two <b>UPVC Pipe sleeves 25mm</b> in diameter, type UPVC schedule 40 to be used as sleeves in the well for the level measurements and level monitoring using a sensor and a cable to be connected to the control board. UPVC pipes shall be perforated below static water surface elevations and bottom ends plugged. Perforation shall be at least 6 mm holes in distance of 15 cm above the plugged end of each pipe. The PVC pipes shall be appropriately attached in place to column pipe using suitable clamps every 2 meters or less. The UPVC pipes shall extend into the discharge head plate according to engineer's directions.	LM	180		
10	Supply and install a <b>Digital water level sensor</b> (Out Diam.=<19mm), 4-20 mA with all necessary components for proper operation and the cable which includes the wires and thin pipe. The sensor will be connected via its cable with the electric board to measure continuously the water level above the pump. The measured value in meter should be shown digitally on the front panel of the control cabinet in accordance with technical specifications and/or engineer's directions. This water level sensor have to be used for protection of the motor against dry running by switching the motor OFF if the water level above the pump sinks to a definite adjustable limit.	LS	1		
11	Supply and install <b>6" Digital water flow meter</b> (16 bars) complete with digital display LCD, wires, flanges, gaskets, bolts, nuts and any other necessary components for proper operation. All according to ISO standards and in accordance with drawings	LS	1		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	and engineer's directions.				
12	Supply and install <b>6" Strainer</b> upstream (16 bars) the water meter in accordance with technical specifications, drawings and engineer's directions	LS	1		
13	Supply and install <b>6" One way valve</b> (check valve, swing type, 16 bars) in accordance with attached technical specifications, drawings and engineer's directions	LS	1		
14	<b>6" Rising stem gate valve</b> for 16 bars complete with flanges, gaskets, bolts and nuts according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
15	Supply and install a common <b>Analog pressure gage</b> (0- 20 bar) on the discharge pipe directly near the well opening as shown in the drawings.		1		
16	Supply and install a <b>Digital pressure measuring sensor</b> to measure digitally the pressure in the discharge pipe near the well opening. The digital measurement in bar should be indicated at the front panel of the control cabinet. All work is in accordance with technical specifications , drawings and engineers directions	LS	1		
17	Supply and install <b>2" Gate and air release valves</b> in accordance with the technical specifications, drawings and engineer's directions.	LS	1		
18	Supply and install a <b>2" Gate valve and pressure relief valve</b> with adjustable setting to allow pressure relief when pressure exceeds an adjustable setting in accordance with technical specifications, drawings and engineer's directions	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
19	Supply and install <b>6" Steel pipe 4mm</b> thick internally and externally coated with backed epoxy for connecting pump, with meters, valves and old network in an around the pump station in accordance with technical specifications, drawings and engineer's directions. Price includes all jacks, accessories, materials and supports needed to connect and support the pipe in place and its connections.	LM	12		
20	<b>6" Flanged dresser</b> complete for (16 bar) with two tie rods 60 cm. long diameter of 5"/8 and 4 ears for each dresser.	LS	2		
21	<b>Wash Out:</b> Executing the main wash out end as drawings. The work shall be complete according to the contract conditions, technical specifications and the engineer approval. Price shall include all work and material needed including a heavy duty 3" flanged gate valve (16 bars), piping and all accessories, fittings and joints needed as shown in drawings.	LS	1		
	<b>Subtotal</b>				59785
	<b>Provisional Items</b>				
1	<b>Lighting Fixtures and Accessories:</b> Work for lighting fixtures is to include supply of the fixtures specified, installation of same connection, wiring, commissioning, lamps, tubes, starter louvers, duct and all other details, for a complete lighting system in the station. All wiring shall be placed in PVC hoses installed in the walls and covered with plaster. <b>Parts to be installed include the following:</b>				
2	Type (A) 2x36w fluorescent surface mounted light fixture IP65 according to technical	LS	2		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	drawings.				
3	Type (B) 1x20w emergency 10 hours duration lighting fixture according to technical drawings.	LS	1		
4	Type (c) 200w halogen outdoor light fixture IP54 according to technical drawings.	LS	1		
5	A single phase 220 volts power outlet water resistant according to technical drawings.	LS	2		
6	A three phase 380V power outlet water resistant according to drawings.	LS	1		
7	Supply and install emulsion paint for internal walls composed of one coat of Tambour fill, 2 coats of putty and 3coats of emulsion.	SM	70		
8	Supply and apply polycid paint for ceiling and walls wherever required, composed of one coat of Tambour fill and minimum 2 coats of polycid.	SM	30		
9	Paint all existing metal works (2 doors and 2 windows) through supplying and applying 2 coats of antirust primer, Tambour synthetic patch putty and 3 coats of Tambour superlac. All metals should be sand cleaned and all rust removed before painting.	LS	1		
10	Supply and cast Reinforced concrete B250 for floor slab with minimum thickness 10cm, the price includes supply and install steel reinforcement 8mm bars @20 cm c/c in both directions .The price shall include surface leveling, mechanical finishing, curing and all related works and subject to Engineer's Approval.	CM	3		
11	Supply and install <b>Metal door for existing well opening 1x1 m.</b> The door should be	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



*Empowered lives.  
Resilient nations.*

[ITB-2014-260]

Inad Wasif Masri Well # 19-17/IA ( Aljiftlik)					
D.	Item	Unit	Qty	Unit Price USD	Total USD
	at least 2mm thick steel sheets with frames formed of metal angles of at least 3cmx3cmx2mm. All steel work shall be painted with one coat of base coat and minimum of 2 coats of superlac paint.				
	<b>Provisional Items Subtotal</b>				
	<b>Total Amount</b>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
1	Dismantling: Carefully dismantle the existing submersible motor-pump set, pipes and any other parts inside and outside the pump room (within the work area) will have to be removed and delivered as instructed by the engineer. The work shall also include all needed equipment (hoist, tripod, crane, electric generator... etc.) to complete the work as required. The work shall be completed according to the contract conditions, technical specifications and the engineer's approval.	LS	1		
2	<b>Submersible Motor Pump Set:</b> Supply, install and operate a new submersible pump with all the accessories it needs to get a working system. The submersible pump have to be with none-return flow valve, pump efficiency > 70% at design point, driven by a submersible three phase induction motor with rated power = <b>125 Horse Power</b> , input voltage (380V-415Vrms), 50Hz, max speed n= 3000rpm, PF > 0.87 and motor efficiency>90%. The pump have to deliver <b>120m³ at T.D.H = 190m</b> . Pump sitting = 260 m, Out Diam. of pump should be< 8.5" , Well casing diameter = 12" , shut off head not less than 270m. <b>Bowl Assembly:</b> Flanged type constructed of close grained cast iron conform to ASTM A48, class 30, free from sand holes, blowholes, or other faults, capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times shut-off head, whichever is greater. Bowls (waterways) have to be internally porcelain coated and externally with backed epoxy coating. All bowls have to be fitted with sleeve type bearings of bronze alloy	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
	<p>C89835. <b>Impellers:</b> The impellers shall be constructed from ASTM B584 Silicon Bronze and shall be the enclosed type, free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced and must be securely fastened to the bowl shaft. <b>Motor Adapter:</b> The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron or approved equal and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings on the screen shall not be more than 75% of the minimum opening of the water passage through the bowl or the impeller. <b>Shaft:</b> The pump shaft shall be of ASTM A 582 type 416 stainless steel with diameter&gt;32mm. It shall be precision ground and polished with optimum surface finish. <b>Coupling:</b> The shaft coupling shall be of stainless steel and be capable of transmitting the total torque and total thrust of the bowl assembly in either direction of rotation. <b>Submersible Electric Motor of 125 Horse Power :</b> A suitable thrust bearing shall be incorporated in the lower end of the motor adequate to receive the entire hydraulic thrust load of the pump unit plus the weight of the rotating parts regardless of the direction of rotation. The motor leads shall be of sufficient length so that they may be spliced above the bowl assembly and the leads shall be protected by a type 304 stainless steel cable guard held in place with stainless steel banding. As the motor lead exit the top of the cable guard it shall be</p>				

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
	properly protected to prevent damaging or cutting the lead by the cable guard material. The <b>motor leads</b> have to be properly connected with the available <b>three phase flat power cable</b> (copper wires) .The connection of the motor leads with the wires of the flat cable should be fully isolated from the water by a proper water resistant material.				
3	<b>Column Pipe:</b> Supply, install and operate a discharge column pipe. The discharge pipe shall be ASTM A53 grade B steel pipe and the weight shall be not less than Schedule 40 and coated with backed epoxy from inside and outside in accordance with AWWA C210-97 in 3 meters length segments and connected by threaded sleeve type steel coupling. The ends of the pipes shall have ANSI B1.20.1 standard tapered pipe threads. Diameter of the discharge pipe is 6".	LM	220		
4	Supply and install a combination set of low and high <b>Pressure switches</b> 1-16 bars and connect them with the control panel unit. Price includes all required cables and accessories for the combination set in accordance with specifications, drawings and/or engineer's directions.	LS	1		
5	Supply and install an <b>Electric flow switch</b> (16 bars ) suitable for 6" pipe powered by a 24 V source, including all cables and accessories to connect it to the available control unit in accordance with technical specifications, drawings and/or engineers directions.	LS	1		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
6	Supply and install one <b>UPVC Pipe sleeve 25mm</b> in diameter, type UPVC schedule 40 to be used for installation of a dry running protection sensor. The PVC pipe shall be perforated below static water surface elevations and bottom ends plugged. Perforation shall be at least 6 mm holes in distance of 15 cm above the plugged end of each pipe. This UPVC pipe and the other available similar one (used for water level measurement) should be appropriately attached to 6"column pipe using suitable clamps every 2 meters or less. The UPVC pipes shall extend into the discharge head plate according to engineer's directions.	LM	440		
7	Supply and install a <b>Digital water level sensor</b> (Out Diam.=<19mm), 4-20 mA with all necessary components for proper operation and the cable which includes the wires and thin pipe. The sensor will be connected via its cable with the electric board to measure continuously the water level above the pump. The measured value in meter should be shown digitally on the front panel of the control cabinet in accordance with technical specifications and/or engineer's directions. This water level sensor have to be used for protection of the motor against dry running by switching the motor OFF if the water level above the pump sinks to a definite adjustable limit.	LS	1		
8	Supply and install <b>6" Digital water flow meter</b> (16 bars) complete with digital display LCD, wires, flanges, gaskets, bolts, nuts and any other necessary components for proper operation. All according to ISO standards and in accordance with drawings	LS	1		



## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي/ برنامج مساعدة الشعب الفلسطيني



Empowered lives.  
Resilient nations.

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
	and engineer's directions.				
9	Supply and install <b>6" Strainer</b> upstream (16 bars) the water meter in accordance with technical specifications, drawings and engineer's directions	LS	1		
10	Supply and install <b>6" One way valve</b> (check valve, swing type, 16 bars) in accordance with attached technical specifications, drawings and engineer's directions	LS	1		
11	<b>6" Rising stem gate valve</b> for 16 bars complete with flanges, gaskets, bolts and nuts according to ISO standards and in accordance with drawings and engineer's directions.	LS	1		
12	Supply and install a common <b>Analog pressure gage</b> (0- 20 bar) on the discharge pipe directly near the well opening as shown in the drawings.		1		
13	Supply and install a <b>Digital pressure measuring sensor</b> to measure digitally the pressure in the discharge pipe near the well opening. The digital measurement in bar should be indicated at the front panel of the control cabinet. All work is in accordance with technical specifications , drawings and engineers directions	LS	1		
14	Supply and install <b>2" Gate and air release valves</b> in accordance with the technical specifications, drawings and engineer's directions.	LS	1		
15	Supply and install a <b>2" Gate valve and pressure relief valve</b> with adjustable setting to allow pressure relief when pressure exceeds an adjustable setting in accordance with technical specifications, drawings and engineer's directions	LS	1		
16	Supply and install <b>6" Steel pipe 4mm</b> thick internally and externally coated with	LM	6		

## United Nations Development Programme

Programme of Assistance to the Palestinian People

برنامج الأمم المتحدة الإنمائي / برنامج مساعدة الشعب الفلسطيني



*Empowered lives.  
Resilient nations.*

[ITB-2014-260]

Sameer Hmoud 18-18/058 ( Alnasaria)					
E.	Item	Unit	Qty	Unit Price USD	Total USD
	backed epoxy for connecting pump, with meters, valves and old network in an around the pump station in accordance with technical specifications, drawings and engineer's directions. Price includes all jacks, accessories, materials and supports needed to connect and support the pipe in place and its connections.				
17	<b>6" Flanged dresser</b> complete for (16 bar) with two tie rods 60 cm. long diameter of 5"/8 and 4 ears for each dresser.	LS	1		
	<b>Total Amount</b>				