

Tender Fee Rs. 500

TENDER DOCUMENT

for

Installation of Bore Well at Pakistan Council of Research in Water Resources (PCRWR) Head Quarters, Islamabad.

under the Project

“Evaluation of Artificial Groundwater Recharge Techniques to Enhance Ground Water Storage and Quality in Urban Areas”

Last Date for Submission: 25th January, 2018 (11:00 AM)

**Pakistan Council of Research in Water Resources (PCRWR)
Khayaban-e-Johar, Near Edhi Homes, H-8/1, Islamabad
Ph: 051-9101282-83, Fax: 051-9101278**

GENERAL INFORMATION ABOUT THE CONTRACTOR/FIRM

Name of Firm: _____

Main Line or Business: _____

Major Accomplishments: _____

Type of Organization: _____

National Tax Number _____

Phone No(s) _____

Mailing address: _____

Fax No. _____ Email: _____

Contact person: _____

**SIGNATURE & SEAL OF
CONTRACTOR/FIRM**

TERMS AND CONDITIONS

GENERAL

The bids are required from the firm/companies registered with FBR/Income Tax as active tax payer as well as with Pakistan Engineering Council with following terms and conditions:

- i. The bidder has to submit earnest money equal to 2% of the total amount of bid(s) in the form of demand draft/pay order in favor of the Pakistan Council of Research in Water Resources (PCRWR), Islamabad. Tenders without earnest money would be rejected outrightly. In case of alternate prices, earnest money will be based on the maximum quoted price of the same item(s). The Earnest Money will be forfeited if a bidder(s) withdraws his bid(s) during the period of his bid(s) validity. The earnest money of unsuccessful bidder(s) will be returned to them after evaluation of bids.
- ii. Conditional/incomplete tenders or those having overwriting will not be accepted.
- iii. Quoted price must be inclusive of all taxes having validity for at least 90 days from the date of tender opening.
- iv. The successful bidder would ensure that the bid is complete in all respects including all accessories, installation and commissioning of the bore well at the specified location.
- v. Last date of submission of offers is **January 25, 2018 (Thursday)** by 11:00 AM. The tenders would be opened at 11:30 AM on the same day in the Committee Room of PCRWR Islamabad in the presence of bidders, who may care to attend.

2. SCOPE OF WORK

The bidder shall supply/install the bore well as detailed in this section and per specifications given in Annexure-I at the project site, which is **PCRWR Headquarters, Khayaban-e-Johar, H-8/1, Islamabad**. The bidder shall be responsible for its commissioning.

a. General

The general character and the scope of work to be carried out under this contract shall be making of bore hole, casing, piping, complete installation and connections of existing solar submersible pump. It serves as general guidance regarding design, drilling and construction of bore well for installation of existing solar submersible pump. Before selecting the method of construction to be adopted, the contractor shall give due consideration to site condition and geological data of the site as determined by him through ER survey. The construction and testing of borewells shall be as per IS 2800-1979 (Part I and II).

b. Selection of Site

The site where the bore well is proposed shall be examined by tenderer for its successful commissioning, and changes if required shall be discussed with the employer prior to start of work. Any previous data available with the Contractor regarding nearby bore wells should be used to evolve suitable procedure for drilling, developing, testing etc.

c. Geological Data

The contractor will firstly conduct the detailed ER survey. During the drilling operation, contractor shall collect strata samples at suitable intervals particularly where the strata

changes. It shall be carefully examined and analyzed that the data shall be preserved carefully and handed over to PCRWR. The contractor shall make one drilling time log during the execution of work for the bore well.

d. Design and Lowering of Pipe Assembly

The contractor will get clearance from PCRWR engineer for the quality of material and accessories before installation of pipes and accessories. The size and length of blind pipes and the perforated/strainer pipes (filter) shall be selected according to the intended discharge and the depth of bore well. The size and distribution of the perforations shall be as per IS 8110. After completion of the bore hole, the contractor shall assemble the casing assembly according to the water bearing strata found during boring, after getting the same approved from the PCRWR Engineer and shall lower in to the drilled hole. The slotted/perforated strainer opposite to water bearing strata from which the water is to be extracted. The bail plug shall rest on firm ground. Before the bail plug is lowered, about one-meter depth of the bore hole shall be packed with the gravel to avoid sinking of the assembly. The perforated/blind pipes shall be provided with proper guides to keep those in the centre of the bore to ensure uniform gravel packing all around.

e. Gravel Packing

All gravel shall consist of hard rounded particles reasonably uniform in diameter and shall be of size, determined after analyzing the character of the water bearing formation tapped. The gravel shroud around the screen shall be uniform. It should be free from dust, dirt and other vegetation matters. The gravel material shall be thoroughly washed before being used as shrouding. Gravel packing once started shall be carried out continuously until it is completed in order to avoid any dirt intrusion, choking etc.

f. Development of Bore well

The well shall be developed either by surging and agitating or by over pumping and back washing with an air lift and high velocity jetting. The bore well shall be developed as per IS 2800 -1979 or latest by air compressor to be arranged by the contractor as required and stipulated in BOQ to obtain the maximum discharge available from the completed tube well.. This development process shall be continued until the stabilization of sand and gravel particles has taken place. The development shall continue until the gravel should stop sinking, discharge of depression ceases to improve and the sand content is not more than 20 parts per million.

g. Sterilization/Disinfection

The well shall be disinfected after completion of test for yield. All the exterior parts of the existing pump coming in contact with the water shall be thoroughly cleaned and dusted with powdered chlorine compound.

The stock solution of chlorine may be prepared for ensuring standard concentration of 50 ppm, 1 liter of the stock solution shall be used to treat 300 liters of water.

h. Grouting and sealing

Grouting and sealing of bore well will be done as per the site conditions and the quality of the water of the strata encountered. To ensure that the grout shall be provided a satisfactory seal, it shall be applied in one continuous operation. Sealing of the bore well may be done by grouting the annular space between bore and the housing pipe, with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4: coarse aggregate 20 mm nominal size) to a depth of 5 m below the grouted level.

i. Handing over the bore well

The bore well shall be handed in complete shape. The housing pipe shall be closed by a well cap for the period between the completions of the bore well and the installation of the pump set. The following information shall be furnished by the drilling agency on completion of the bore well:

1. Strata chart of the bore well indicating the different types of soils met at different depths.
2. Samples of strata collected, neatly packed and correctly marked in sample bags.
3. Chart of actual pipe assembly lowered indicating the size of pipes, depth ranges, where strainer pipes have been used, depth and diameter of UPVC pipe, reduced level of the top of the housing pipe and the diameter and depth of the bore hole.
4. Position of every joint in the well assembly.
5. Pumping water level at the developed discharge.
6. Results of development along with levels of static subsoil water and depth of drawdown for steady discharge.
8. Results of mechanical (sieve) analysis of samples of aquifer materials wherever applicable.
9. Yield analysis and recommendation on the safe pumping yield etc.
10. Verticality tests results to be recorded in accordance with IS: 2800-1979.

j. Bore well data

1. Bore – 250 mm dia (10 inches).
2. Depth - 250 Feet
3. Assembly – Blind and perforated Pipes (minimum 30 ft or as recommended by contractor after ER) - 150 mm dia (6 inches) up to complete depth.
4. Material – UPVC pipes (Class D)
5. Verticality - True verticality as per IS - 2800- 1979
6. Packing - Pea Gravel/Stone Chips
7. Developing - Minimum 60 Hrs or till sand free discharge is obtained.
8. Water for drilling - Contractor shall make his own arrangement for water required for drilling purposes as well for development purposes.
9. The design for the bore well indicating the depth range of the aquifer zones to be tapped shall be given after a detailed study of the data collected during drilling operations.
10. All the casings shall be of UPVC good quality (Class D) confirming to IS specifications and carry manufacturer's certificate. The slotted pipes must have an effective open area of at least 15% and the slotted size should be 1.6 mm (maximum).

Centering guides may be used to maintain the verticality of the bore wells and pipe casing which shall be tested in accordance with the norms stipulated in IS 2800.

11. The annular space between the bore well and pipes shall be packed with well-graded pea gravel of good quality, durability and high sphericity after thorough washing.

3. BID PRICE AND QUOTING

The bidder shall indicate, in his offer the unit prices inclusive of supply, transportation, installation with all taxes. Payment of any taxes, duties etc. levied before opening of bids by the Government shall be the full responsibility of the bidder(s) subject to prevailing regulations. The prices shall be quoted in Pakistan Rupees only. The person signing the bid shall initial all the pages of the bid(s) declaring that he/she has read and well understood the signed page of the tender. The pages containing the prices should be signed and stamped. Prices charged by the supplier for goods delivered and services performed under the contract shall not exceed from the prices quoted by the supplier in its bid(s). No bid received after the prescribed deadline would be entertained and will be rejected without caring the reasons for delayed receipt in PCRWR Headquarters, Islamabad even due to negligence of the bidder or the postal/courier services *etc.*

4. PURCHASER'S RIGHTS

Pakistan Council of Research in Water Resources, Islamabad reserves the right to reduce/increase the quantity, prior to award of contract, thereby evolving no financial liability whatsoever or any other obligation on the part of PCRWR from the side of bidders. No other sub-office (outfit) of PCRWR is authorized to collect bid(s), only PCRWR Head Office located at **Khayaban-e-Johar H-8/1, Islamabad** is authorized to do so.

5. CONVERSING

Unsolicited advice/clarification and any personal contact at any stage of evaluation of bids are strictly prohibited and may lead to disqualification. The bids will be evaluated and finalized in accordance with the valid guidelines of the PPRA and PEC.

6. PERFORMANCE GUARANTEE/WARRANTTEE

The successful bidder(s) is/are required to furnish a performance guarantee, equivalent to 10% of the total contract amount within ten days of issuance of supply order/award of contract; otherwise equivalent amount will be retained from payment for performance period as compensation for any loss resulting from the supplier's failure to complete its obligation. Performance guarantee/security will be forfeited in case of failure to successfully complete the performance period of the equipment. The withheld performance security will be returned after successful completion of the guarantee period. In case of malfunctioning of the components systems during the period, the company would be asked to correct or replace the faulty components. Failure to respond and correct the fault accordingly may lead to blacklisting of the company as per the rules and regulations inforce by the Governemnt of Pakistan.

7. DELIVERY AND INSTALLATION

- i. The bidder shall complete the installation and commissioning within 1 month from the date of issuance of work order by the Pakistan Council of Research in Water Resources, Islamabad. A penalty @ 0.01% of the quoted price per day may be charged after expiry of delivery/installation/commissioning period till the supply of equipment/item and its installation. Supply order can be canceled after an extended period of **30 days** from the expiry of first supply order and earnest money will be forfeited.
- ii. The system will be installed at PCRWR, HQ, Khayaban-e-Johar, H-8/1 Islamabad

8. MODE OF PAYMENT

No advance payment will be made to any firm against any supply order in any case. No such demand will be entertained and failure to supply of items against supply order will lead to forfeiture of the earnest money. Payment shall be made in the form of cross-cheque, which shall be issued, after receipt of equipment/items, inspection, installation and commissioning. The mode of payment will be as under:

- i. 90% payment on successful installation/commissioning of the system.
- ii. 10% payment after completion of six months (performance guarantee/defect liability period).

9. PCRWR RESPONSIBILITY

Coordinate and collaborate with the firm about all the technical aspects of the project components. In this regard, an engineer would be designated.

10. EVALUATION CRITERIA

- The bids would be evaluated based upon their technical soundness with the Terms and Conditions set forth in this document. The **technically qualified lowest bid** will be selected.
- The procuring agency may cancel the tender as per PPRA rules (Rule 33(1)). PPRA rules and other prevailing government rules shall be applicable.
- The PCRWR designated Field Engineer, will examine items, equipment, material, supplies and/or services to be provided under this contract, at any time prior to expiry of this contract. He may reject or require alteration thereto or replacements thereof as a condition of acceptance and its findings shall be conclusive except in regard to defects or fraud which may appear later.
- Accomplishment and/or execution of each item of work (total or a part thereof) shall be considered subject to the verification of Field Engineer designated by the Department for work accomplishment.

Annexure-I

Details of the Well Works

Sr. No	Work Item	Unit	Quantity	Unit Rate (Rs.)	Amount (Rs.)
1	Electrical resistivity survey of the bore/pumping site	Job	1		
2.	Drilling of Ø10" bore with rotary type/percussion type rig in all types of strata as per site (250 ft)	Job	1		
3.	Supply and lowering/installation of Ø6" UPVC Class D casing (blind and perforated/slotted pipe as per the Electrical Resistivity Test finding) complete in all respects along with UPVC capping for sealing of casing etc.	RFT	250 ft		
4.	Supply and installation of filter screen	Job	1		
5.	Supply and packing of gravel around UPVC pipe upto 250 ft	Job	1		
6.	Development of bore well with air compressor	Job	1		
7.	Sterilization of bore well	Job	1		
8.	Supply and installation of Ø 0.75-1" HDPE pipe with complete accessories i.e. tees, bends, clamps and safety wire and DC wire etc. complete in all respects from submersible pump to overhead water tank (400 ft)	Job	1		
Grand Total (Rs.)					

I/We hereby undertake that we have read and well understood the terms of the conditions of the tender and agree to abide those.

Rs. _____

Amount in words (Rupees) _____

Place :- _____

Date :- _____

Sign & Seal of the Tenderer