

Sub: Limited tender quotation – Experimental Investigation and field data collection in North western India

Quotations are invited for experimental investigations in alluvial tract of the Gahaggar basin in north west India (Punjab, Haryana and Rajasthan). The scope of work is described as under:

Part A: Drilling of tubewells

1. Drilling of 9 boreholes and construction of 9 tubewells as per specifications given in attached Annexure-1. The locations of the sites are also given in Annexure-1. The exact position of the slots will be decided based on lithological information collected during drilling.
2. Eight boreholes will be converted to observation wells with assembly configuration of blank and slotted 4" diameter PVC pipe. The observation wells are to ideally have 3-4 meters of slotted pipes.
3. The observation wells should be developed by Air compressor (if required) and cleaned so that they reflect the original water level in the aquifer.
4. For all 9 sites, litholog from the borehole will be prepared up to the drilled depth for not less than 1 meter interval.

Part B: Aquifer performance test

1. One borehole up to depth of 200 meters (at site KA-2, see annexure-1) will be converted to production well to serve the purpose of pumping well during Aquifer Performance Test. using standard procedure (Air compressor cleaning/over pumping if required) for the desired optimum yield.
2. The production well is required to have 8-10 inches diameter of the casing pipe with 10-16 meters of slotted pipe in depth range of slots mentioned in Annexure-1. The tubewell will end with a conical bottom. the experimentation would ideally require yield in the range of 1000-2000 Litre per minute.
3. To provide, supply and install the experimental setup for conducting Aquifer performance test (24 to 48 hrs.) for one site KA-2 (see attached Annexure-1).
4. All infrastructure installation/ dismantling for the experimental setup should be done under the supervision of Project Investigator or his representative.
5. The experimental setup should be comprehensive in terms of infrastructure such that only observations will be taken by the technical expert of the Project Investigator. All infrastructure should be provided by the contractor including diesel run pump/motor setup, generator, airline, sample collecting device, discharge measuring device, measuring tapes, bailer etc.

Part C: Logging of boreholes

6. All 9 boreholes will be logged for SP, resistivity and Gamma ray as per standard methods using a continuous geologger.

Part D: Coring and sampling

7. Five boreholes will also be cored for continuous, undisturbed sediment sampling up to 50 meters depths per Annexure-1; the cores will have diameter of 3 inches.
8. Core samples should not have any contamination of drilling mud and core loss should be minimized.
9. Undisturbed core samples will be provided in PVC tubes.

Terms and conditions:

1. Quotations shall be made item wise specific to individual parts of the experimental investigations. The company can also quote for selected parts only if they do have the necessary expertise to take up the entire work. Individual work contracts can be awarded for different parts.
2. The entire work shall be completed within three month from the date of award of the contract.
3. There can be minor changes in drilling depth/ length of slots etc. as mentioned in specifications attached as Annexure-1 based on site specific conditions. Such changes, if affecting substantially the input cost component, will be compensated by changes in specifications at other sites in accordance to prevailing geological conditions thereby maintaining the overall cost of the work as constant.
4. A final report will be prepared by the company after the work is complete detailing methodology results of well logging and interpretation and lithologs of all boreholes.

Quotations in sealed envelopes should reach the undersigned before or on 30 August, 2013.

(Rajiv Sinha)

Department of Civil Engineering
Indian Institute of Technology Kanpur
Kanpur 208016 (UP)

Details of boreholes, location and specifications

Part A, B and C: Drilling of tubewells. Aquifer Performance Test and borehole logging

SN	Site	Location	Latitude	Longitude	Borehole depth (m)	Depth of well construction	Approx. Slot position ¹	Well logging
1	KA2	Jalalpur	29.991	76.183	50 m	27-29 m	25 m	None
2	KA2	Jalalpur ²	29.991	76.183	200 m	5-62 m	55-60 m	SN, LN, SP
3	KA7	Siwan	29.9142	76.3239	50 m	2-29 m	25 m	None
4	KA7	Siwan	29.914	76.3239	200 m	153 m	150 m	SN, LN, SP
5	TN1	Tatiana	30.1	76.3231	50 m	27-29 m	25 m	N.A
6	TN1	Tatiana	30.1	76.3231	200 m	58-62 m	55-60 m	SN, LN, SP
7	TN3	Hariharh	30.06	76.378	200 m	153 m	150 m	SN, LN, SP
8	AKBARPUR	Akbarpur	30.166	76.003	50 m	27-29 m	25-30 m	N.A
9	AKBARPUR	Akbarpur	30.166	76.003	200 m	58- 62 m	55-60 m	SN, LN, SP
				TOTAL	1250m	~600m		

Notes:

1. Exact position of slots to be decided on site after well logging.
2. Site for Aquifer Performance test (APT) for which 8-10 " diameter hole will be required.

Part D: Coring for continuous sampling

Serial No.	Site	Location	Latitude	Longitude	Coring Depth
1	KA2	Jalalpur	29.991	76.183	50 m
3	KA7	Siwan	29.9142	76.3239	50 m
5	TN1	Tatiana	30.1	76.3231	50 m
7	TN3	Hariharh	30.06	76.378	50 m
8	AKBARPUR	Akbarpur	30.166	76.003	50 m
				TOTAL	250m