

Ref: 4318/063/KM/01/5810

December 24, 2021

**FEASIBILITY STUDY FOR REMODELING OF BRBD LINK CANAL TO MEET THE  
SHORTAGE OF CANAL SUPPLY FOR LAHORE AND KASUR DIVISIONS**

**Invitation of Bids for Geotechnical Investigations**  
**(Field and Laboratory Works)**

Dear Sir,

Sealed bids (Technical and Financial in separate sealed envelopes) are invited in accordance with the attached BOQs and qualification criteria from drilling Contractors/ companies for carrying out the geotechnical investigations for the subject project.

The companies capable of carrying out subject work are requested to provide their Company's Profile and the following documents along with their sealed bids:

1. Valid PEC Registration Certificate
2. FBR & PRA Registration Certificates with proof of active tax payer
3. List of Similar Projects completed during last three years
4. Financial Capability
5. Equipment Capability
6. Personnel Capability
7. Litigation History
8. HSE Policies

The work comprises; execution of thirty-three (33) boreholes up to maximum depth of 20 m depth below natural surface level (NSL) by using straight rotary drilling method, excavation of twenty-five (25) testpits, performance of SPTs & field permeability tests in boreholes, performance of field density tests in testpits, collection of disturbed/undisturbed soil samples, collection of water samples and laboratory testing of selected soil/water samples. The field and laboratory work shall have to be completed according to the following time schedule:

<b>Minimum No. of Straight Rotary Drilling Rigs/ Percussion Boring Sets Required</b>	<b>Total Time for Completion of Field Investigations</b>	<b>Total Time for Completion of Field &amp; Laboratory Investigations</b>
02	30 Days	45 Days

Your bid shall be valid for a time period of ninety (90) days after the bid opening. The work shall be executed under the instructions and full-time supervision of consultants i.e., NESPAK-BARQAAB-MMP Joint Venture engineers/geologists and the successful bidder shall mobilize to the site on three (03) days' notice after issuance of Letter of Award/Acceptance.

**A Joint Venture of :**

- National Engineering Services Pakistan (Pvt.) Limited, 1-C Block-N, Model Town Extension, Lahore (Lead Partner)
- MM Pakistan (Pvt.) Limited, C.T.I Plaza, 27 Express Road, Lahore (JV Partner)
- BARQAAB Consulting Services (Pvt.) Limited, Sunny View Estate, Kashmir Road, Lahore (JV Partner)

The coordinates and ground elevations of all the boreholes and testpits by total station / differential GPS shall have to be provided to consultants before completion of investigation at site by the Contractor.

The approved laboratory, where testing is to be carried out, shall be pursued by the successful bidder for timely completion of the assigned laboratory testing. The successful bidder shall be responsible for providing the factual geotechnical investigation report (including field borehole & testpits logs, summary of samples recovered, summary of laboratory test results and detailed laboratory test result sheets) to the Consultants within the contract period.

The bidders shall submit a bid security (in Financial Proposal Envelope) amounting to 2 % of total bid price at the time of submission of bids in the form of pay order or bank draft in favor of M/s. NESPAK.

Your most competitive sealed bids (inclusive of all taxes) in accordance with the attached BOQs and qualification criteria, should reach the office of the undersigned by 1100 hours on or before January 10, 2022. Technical bids would be opened on the same day at 1200 hours after their receipt in the presence of those bidders who wish to be present.

Financial bids would be opened after evaluation of Technical bids, at a time, date and venue announced and communicated to the technically responsive bidders in advance. However, the final decision to accept/reject any or all the bids as per PPRA rules solely lies with the undersigned. The entire work shall be carried out in accordance with the requirements of the General Bidding Documents for Geotechnical Investigations available at NESPAK website ([www.nespak.com.pk](http://www.nespak.com.pk)). Payment of the entire work shall be made by NESPAK after receipt of Factual Geotechnical Investigation Report and its fee from Client.

Yours faithfully,  
for NESPAK-MMP-BARQAAB Joint Venture,



KHALID MAHMOOD  
Team Leader  
Water and Agriculture Division  
NESPAK House, 1-C Block N  
Model Town Extension, Lahore

Encl: As above

**FEASIBILITY STUDY FOR REMODELLING OF BRBD LINK CANAL TO MEET THE SHORTAGE OF CANAL SUPPLY FOR LAHORE AND KASUR DIVISIONS**

**GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

Sr. No.	Description	Unit	Qty.	Rate (Rs.)	Amount (Rs.)
A.	<b>FIELD INVESTIGATIONS</b>				
A1	Mobilization and demobilization of at least <b>two (02) straight rotary</b> drilling rig including setting-up & shifting of equipment from one investigation point to another. The equipments should be sufficient to meet the time schedule. Minimum permissible diameter of borehole is 100 mm for straight rotary / hand auger method.	L.S.	Job		
A2	Execution of <b>Six (06)</b> boreholes up to a maximum depth of <b>10 m</b> for <b>Construction of bypass channel</b> , <b>Two (02)</b> boreholes up to a maximum depth of <b>10 m</b> for <b>Construction of Head Regulator of bypass channel</b> , <b>Six (06)</b> boreholes up to a maximum depth of <b>20 m</b> for <b>Construction of New Ravi Syphon</b> , <b>One (01)</b> boreholes up to a maximum depth of <b>10 m</b> for <b>Construction of Head Regulator of WASA Raw water channel</b> , <b>Six (06)</b> boreholes up to a maximum depth of <b>10 m</b> for <b>Construction of Raw water channel for WASA</b> , <b>Seven (07)</b> boreholes upto a maximum depth of <b>10 m</b> for <b>Construction of Gated Head Regulator from RD 205+000 – 283+000 of BRBD Link Canal</b> and <b>Five (05)</b> boreholes up to a maximum depth of <b>15 m</b> for <b>BRBD Link Canal from RD 0+000 to 537+546</b> (total number of boreholes =33 all inclusive) in overburden soils below NSL by straight rotary drilling method including backfilling of boreholes to their original position by using cement-sand-bentonite mix.	L.M.	415		
A3	Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m depth interval in general, or as necessary, including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	345		
A4	Collection of undisturbed soil samples from boreholes through Shelby/Denison/Pitcher samplers, including their waxing, labelling, packing, storage & transportation to an approved testing laboratory.	No.	70		
A5	Excavation of <b>Twenty five (25)</b> testpits (2.0mX2.0m) below top of the ground in overburden soil up to a maximum depth of 2.0 m as per the directions of the consultants and backfilling of pits to their original condition.	No.	25		
A6	Performance of field density tests by sand replacement method in test pits generally @ 2 tests/pit at selected horizons, including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture tins for moisture content determination in laboratory by oven drying method as well as labelling, packing, storage & transportation to an approved testing laboratory.	No.	50		
A7	Collection of undisturbed block samples (30 cm*30cm*30cm) from test pits including their waxing, labeling, packing, storage & transportation to an approved laboratory.	No.	25		
A8	Collection of bulk soil samples (60 kg for Sandy/ clayey soils & 120 kg for gravelly soils) from test pits including their labeling, packing, storage & transportation to an approved testing laboratory.	No.	25		
A9	Performance of field permeability test (falling head/constant head) in separate borehole including drilling with auger hole upto depth of 10 m below NSL or as directed by the Engineer.	No.	25		
A10	Collection of ground water samples (if encountered) from boreholes/ test pits including their labeling, packing, storage & transportation to an approved testing laboratory.	No.	15		
	<b>Sub-Total A</b>	<b>Rs.</b>			

Establishment of coordinates and ground elevations of all the boreholes & testpits using **TOTAL STATION** are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.

All soil / water samples shall be stored and transported as per ASTM standards. The area and clearance ratio of the sampling tubes should be as per ASTM requirements.

Contractor will be responsible for arrangement of Personnel Protective Equipments (PPEs) such as safety helmets and jackets for Consultants site supervisory / visiting staff.

Straight rotary drilling method will be used for execution of borehole in sandy / clayey soil. However, percussion method of boring will be required if gravelly strata encountered

**FEASIBILITY STUDY FOR REMODELLING OF BRBD LINK CANAL TO MEET THE SHORTAGE  
OF CANAL SUPPLY FOR LAHORE AND KASUR DIVISIONS**

**GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

<b>Sr. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty.</b>	<b>Rate (Rs.)</b>	<b>Amount (Rs.)</b>
<b>B.</b>	<b>LABORATORY TESTING</b>				
B1	Sieve analysis	No.	150		
B2	Hydrometer analysis	No.	100		
B3	Liquid & plastic limits	No.	100		
B4	Bulk & Dry density	No.	50		
B5	Consolidation with Swell Potential Measurements	No.	30		
B6	Direct Shear	No.	100		
B7	Unconfined Compression (Soil Samples)	No.	30		
B8	Modified AASHTO Compaction	No.	20		
B9	3-Point Soaked CBR	No.	20		
B10	Relative Density and Void Ratio (Porosity Test)	No.	20		
B11	Sulphate and Chloride content of soil	No.	15		
B12	Organic matter content of soil	No.	15		
B13	Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH	No.	10		
	<b>Sub-Total B</b>	<b>Rs.</b>			
<b>Name of Laboratory:</b>					
<b>Total (A+B)=</b>				<b>Rs.</b>	

**QUALIFICATION CRITERIA OF BIDDING CONTRACTORS FOR  
GEOTECHNICAL INVESTIGATIONS FOR FEASIBILITY STUDY FOR REMODELING  
OF BRBD LINK CANAL TO MEET THE SHORTAGE OF CANAL SUPPLY FOR  
LAHORE AND KASUR DIVISIONS**

**1. Qualification Criteria**

Qualification will be based on the criteria given in the following paras regarding the Applicant's experience, personnel and equipment capabilities, financial position and litigation history, as demonstrated by the Applicant's responses in the Forms attached as Annex-A to this Document. The Employer reserves the right to waive minor deviations, if these do not materially affect the capability of an Applicant to perform the contract by the Applicant.

Experience and resources of the Company intended to be employed as sub-contractor shall not be taken into account in determining the Applicant's compliance with the qualifying criteria. However, for joint venture, collective experience, resources and financial soundness of all partners shall be considered.

**1.1 General Information**

The Applicant shall provide general information of his / her firm as per the format specified in the Application Form A-1 attached in Annex-A.

**1.2 Experience of the Firm**

The Applicant shall meet the following minimum criteria:

- 1) Successful experience as Contractor in the execution of at least five (5) projects involving bulk of geotechnical investigations within the last three (03) years. This experience should specifically be of geotechnical investigations of similar nature. The Applicant will supply information as per the format specified in the Application Form A-2 attached in Annex-A.

**1.3 Personnel Capabilities**

The Applicant must have in his employment, suitably qualified and experience personnel to fulfill the positions tabulated below. The Applicant will supply information as per the format specified in the Application Form A-3 attached in Annex-A.

Sr. No.	Position	Qualification*	Minimum No. Required	Minimum Experience (Years)
1	Technical Manager	B.Sc. Civil Engg.	1	5
2	Site Geologist/ Supervisor / Engineer	M. Sc. Geology/ B.Sc. Civil Engg. / B.Sc. Geological Engg.	3	3
3	HSE Supervisor	HSE Certification	1	1

		course		
4	Driller	Literate	4	3
5	Skilled Labor	-	As required	-

#### 1.4 *Equipment Capabilities*

The Applicant should own, or have assured access to the following key items of equipment in full working order, and must demonstrate that, based on known commitments, these will be available for deployment on the proposed works.

<b>Sr. No.</b>	<b>Equipment Type &amp; Characteristics</b>	<b>Minimum Number Required</b>
1	Straight Rotary Drilling rigs complete in all respects including drilling rods, bits, mud pumps etc. along with at least one stand-by rig.	2
2	Percussion boring set ( $\geq 250$ mm diameter) complete in all respects including tripod, chiesal/bit etc.	1
3	Casing set having various diameters for all types of boring at least 15 m in length with casing bits.	4
4	Core barrels (single tube & double tube) including coring and casing bits	3 each
5	Standard penetration test equipment complete in all respects (i.e. as per ASTM requirements) including all rods, split spoon sampler, hammer and containers etc.	4
6	Denison/Pitcher/Shelby samplers and tubes	10 each
7	Hydraulic jacks with all accessories for the extraction of casings	1
8	Electrically operated sounder for groundwater level measurement	1
9	Testpit excavation equipment, complete in all respects	4
10	Field density test (FDT) apparatus complete in all respect as per ASTM requirements.	5
11	Field permeability / water pressure test apparatus complete in all respects including hand auger apparatus for drilling.	2
12	Wooden box for the preservation of undisturbed soil samples	As required
13	Transport for mobilization of equipment	As required

The Applicant will supply information as per the format specified in the Application Form A-4 attached in Annex-A.

#### 1.5 *Financial Capabilities*

The Applicant shall meet the following minimum criteria:

- 1) Annual turnover which is also termed as income from contracting for procurement of

geotechnical investigations and is defined as billing for works completed during the last three (3) years of at least Rs. 10 million or the said figure has been achieved in any year during the last three (3) years.

The Applicant shall also provide evidence of financial health such as bank account statements, available line of credits, etc., to show the soundness of the Applicant's financial position for procurement of geotechnical investigations works. The Applicant will provide annual turnover of the geotechnical investigation works carried out by him during the last three years. The Applicant will supply annual turnover information as per the format specified in the Application Form A-5 attached in Annex-A.

### ***1.6 Litigation History***

The Applicant should provide accurate information on any litigation or arbitration resulting from Contracts completed or under execution over the last three (03) years. The Applicant will supply information as per the format specified in the Application Form A-6 attached in Annex-A. A consistent/ overwhelming history of award against the Applicant may result in rejection of the application. In case an Applicant claims Nil litigation, he shall submit the same statement on the letter head of his company.

### ***1.7 Application of Health, Safety and Environmental Standards***

The Applicant should provide the HSE Policies and supporting documentary evidence for the following:

- i) First Aid Box
- ii) Personnel Protective Equipments (PPEs)
- iii) Standard Operating Procedures (SOPs)
- iv) Health, Safety and Environmental (HSE) Policies
- v) HSE staff

## Application Form A-1

Page \_\_\_ of \_\_\_ Pages

**General Information**

All individual Applicants applying for qualification are requested to complete the information in this form. Nationality information (if applicable) is also to be provided for foreign owners as required under the PEC Bye-Laws as a Partnership.

1.	Name of Firm	
2.	Head Office Address	
3.	Telephone	Contact Person: Name: Title: Cell No.
4.	Fax	E-mail
5.	Place of Incorporation/Registration Certificates of the firm*	Year of incorporation/registration

**\* Registration certificates must include:**

- Valid registration with Pakistan Engineering Council (PEC)
- Valid registration with Federal Board of Revenue (FBR)
- Valid registration with concerned Provincial Revenue Authority (PRA)
- Proof of active taxpayer of FBR
- Proof of active taxpayer of Punjab & Sindh Provincial Revenue Authority (PRA)



**Experience of the Firm**

*Name of Applicant:* \_\_\_\_\_

Sr. No.	Name of Project	Value of Geotechnical Contract* (Pak Rs.)	Contract Duration

*\*Attach copy of Letter of Awards / Project Completion Certificates for any five (5) latest projects.*

**Personnel Capabilities**

*Name of Applicant:* \_\_\_\_\_

Sr. No.	Name of Person	Qualification	Designation/ Position*	Total Experience

*\*Attach CVs of the Key Staff Members.*

**Equipment Capabilities**

Name of Applicant: \_\_\_\_\_

Sr. No.	Equipment Description	Capacity	Number of Equipment	Working Condition a) Very good b) Good c) Satisfactory	Current Location

**Financial Capabilities**

*Name of Applicant:* \_\_\_\_\_

<b>Year</b>	<b>Annual Turnover (in PKR)</b>
2020 - 2021	
2019 - 2020	
2018 - 2019	

*Note: Financial soundness certificate from the bank(s) as specified in section 1.5 must be provided by the Applicant*

**Litigation History**

*Name of Applicant:* \_\_\_\_\_

<b>Year</b>	<b>Award for or against Applicant</b>	<b>Name of Client, cause of litigation, and matter in dispute</b>	<b>Disputed amount (current value Pak Rs. or equivalent)</b>

