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Date: October 22, 2021

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**REHABILITATION / UPGRADATION / DUALIZATION OF  
PQA MAIN ACCESS ROAD, KARACHI****Invitation of Bids for Geotechnical Investigations (Field and Laboratory Works)**

Dear Sir,

Sealed bid (Technical and Financial in separate sealed envelopes) is invited in accordance with the attached BOQ 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. PEC Registration Certificate
2. FBR & PRA Registration Certificates
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 boreholes up to 35 m depth below natural surface level (NSL) in overburden soils by Straight Rotary/heavy percussion drilling rig, core drilling, excavation of test pits, performance of SPTs in boreholes, performance of field density tests in test pits, collection of disturbed/undisturbed soil samples, collection of water samples and laboratory testing of selected soil/rock/water samples. The field and laboratory work shall have to be completed according to the following time schedule:

| Sr. No. | Minimum No. of Straight Rotary Rig Required | Time for Completion of Field Investigations | Time for Completion of Laboratory Testing | Total Time for Completion of Field & Laboratory Investigations |
|---------|---|---|---|--|
| 1       | 2   | 3 weeks                                     | 2 weeks                                   | 5 weeks  |

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 NESPAC engineers/geologists and the successful bidder shall mobilize to the site on two (02) days' notice after issuance of Letter of Award/Acceptance.

The coordinates and ground elevations of all the investigation points by total station shall have to be provided to NESPAC 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 field borehole & test pit logs, summary of laboratory test results and detailed laboratory test results to NESPAC, within the contract period. A premium of up to 25 % will be admissible on the official rates of the soil laboratory, selected for

testing of samples. This premium has been allowed as compensation to the Contractor for making advance payment to the laboratory and later following-up for obtaining test results in time. The name of the laboratory should be provided on page 2 of 2(Annexure-1).

The bidders shall submit a bid security amounting to 5% of 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 BOQ and qualification criteria, should reach the office of the undersigned by 1100 hours on or before **November 08, 2021**. 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 its fee from Client.**

for National Engineering Services Pakistan (Pvt.) Limited



(IRFAN UL HAQ)

Vice-President/Head

Geotechnical & Geoenvironmental Engineering Division





**REHABILITATION / UPGRADATION / DUALIZATION OF PQA MAIN ACCESS ROAD,  
KARACHI**

**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 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*   | No.            | Minimum Experience (Years) |
|---------|---|--|----------------|----------------------------|
| 1       | Technical Manager                           | B.Sc. Civil Engg.  | 1              | 5                          |
| 2       | Site Geologist/<br>Supervisor /<br>Engineer | M. Sc. Geology/ B.Sc.<br>Civil Engg. / B.Sc.<br>Geological Engg. | 3              | 2                          |
| 3       | HSE Supervisor                              | HSE Certification<br>course                                      | 1              | 1                          |
| 4       | Driller                                     | Literate   | 2              | 3                          |
| 5       | Skilled Labor                               | -  | As<br>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.

| Sr. No. | Equipment Type & Characteristics   | Minimum Number Required |
|---------|--|-------------------------|
| 1       | Straight Rotary Drilling rig complete in all respects including drilling rods, bits, mud pumps etc. along with at least one stand-by rig. The equipment shall be capable to obtain core recovery more than 80 percent and to complete the investigations within the time schedule. | 2                       |
| 2       | Percussion Boring Set (>250 mm diameter), complete in all respects including tripod, chisel / bit etc.   | 1                       |
| 3       | Casing set having various diameters for all types of boring at least 20 m in length with casing bits.  | 2                       |
| 4       | Standard penetration test equipment complete in all respects including all rods, split spoon sampler, hammer and containers etc.   | 2                       |
| 5       | Core barrels (double tube) including coring and casing bits.   | As required             |
| 6       | Shelby/Denison/Pitcher samplers  | 1 each                  |
| 7       | UDS tubes & Split Spoon Samplers   | As Required             |
| 8       | Hydraulic jacks with all accessories for the extraction of casings   | 2                       |
| 9       | Electrically operated sounder for groundwater level measurement  | 1                       |
| 10      | Testpit excavation equipment complete in all respect   | As Required             |
| 11      | Field density test apparatus (with 6 and 12 inches dia. cone) complete in all respect  | 1 each                  |
| 12      | Wooden box for the preservation of undisturbed soil/rock 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) Average 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. 3 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 litigation 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

The Applicant will supply information as per the format specified in the Application Form A-7 attached in Annex-A.





**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:<br>Name:<br>Title:<br>Cell No. |
| 4. | Fax  | E-mail   |
| 5. | Place of Incorporation/Registration<br>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 & PRA











**Financial Capabilities**

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

| <b>Year</b> | <b>Annual Turnover<br/>(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*









| REHABILITATION (UPGRADATION) DUALIZATION OF PUA MAIN ACCESS ROAD, KARAF III  |   |      |      |            |              |
|--|---|------|------|------------|--------------|
| GEO-TECHNICAL INVESTIGATIONS FOR BRIDGES AND CULVERTS  |   |      |      |            |              |
| BILL OF QUANTITIES   |   |      |      |            |              |
| Sr. No.  | Description   | Unit | Qty. | Rate (Rs.) | Amount (Rs.) |
| <b>A FIELD INVESTIGATIONS</b>  |   |      |      |            |              |
| A1   | Mobilization and demobilization of at least two (2) straight rotary / percussion drilling rigs alongwith allied accessories at site including setting up and shifting from one investigation point to another. The equipment should be sufficient enough to complete the work within scheduled time.  | L.S  | 166  |            |              |
| A2   | Excavation of eight (08) boreholes upto a maximum depth of 15 m at structure locations below NSL or rock strike level whichever is met earlier, by straight rotary / percussion drilling method including backfilling of boreholes to their original position using concrete, sand and limestone mix. Maximum permissible diameter of borehole is 150 mm for percussion method and 101 mm for straight rotary method.   | L.M  | 199  |            |              |
| A3   | Excavation of two (02) boreholes upto a maximum depth of 10 m at culvert locations below NSL or rock strike level whichever is met earlier, by straight rotary / percussion drilling method including backfilling of boreholes to their original position using concrete, sand and limestone mix. Maximum permissible diameter of borehole is 150 mm for percussion method and 101 mm for straight rotary method.   | L.M  | 20   |            |              |
| A4   | Continuous core drilling in bedrock (NX size in general) up to a maximum depth of 8 to 10 m below rock strike level, including preservation of core samples in core boxes, washing of core samples, photography of rock cores and transportation of core samples to the laboratory.   | L.M  | 70   |            |              |
| A5   | Performance of Standard Penetration Tests (SPTs) in boreholes along with collection of SPT samples at 1 m interval in general, or as necessary, including their labeling, packing, storage & transportation to an approved testing laboratory.  | No   | 194  |            |              |
| A6   | Collection of undisturbed soil samples from boreholes through Shelby/Denison/Puncher samplers, including their washing, labeling, packing, storage & transportation to an approved testing laboratory.  | No   | 16   |            |              |
| A7   | <b>For Dualization:</b><br>Excavation of eight (08) testpits up to a maximum depth of 1.5 m at overburden soils or rock strike level whichever is met earlier, including backfilling of pits to their original condition.   | L.M  | 12   |            |              |
| A8   | <b>For Upgradation:</b><br>Excavation of eighteen (18) testpits up to a maximum depth of 1.0 m or up to subgrade, whichever is met earlier, along the route, including exposing of road/pavement layers and backfilling of pits to original condition including 1:1 thick P.C.C. (1:2:4) pad at top of each pit for level surfacing.  | L.M  | 18   |            |              |
| A9   | Excavation of three (03) testpit up to a maximum depth of 2.0 m at overburden soils or rock strike level whichever is met earlier at borrow area, including backfilling of pits to original condition.  | L.M  | 6    |            |              |
| A10  | Performance of field density tests by sand replacement method in test pits generally @ 1 test/pit at selected horizons, including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture cans for moisture content determination in laboratory by oven drying method as well as labeling, packing, storage & transportation to an approved testing laboratory.   | No   | 8    |            |              |
| A11  | Performance of field density tests by sand replacement method in testpits generally @ 2-3 test/pit at selected horizons in existing pavement layers (i.e. in Water Bound Macadam/ Aggregate Base Course, Sub-Base and Sub-grade), including determination of in-situ bulk and dry density and collection of small disturbed samples in moisture cans for moisture content determination in laboratory by oven drying method as well as labeling, packing, storage & transportation to an approved testing laboratory. | No   | 45   |            |              |
| A12  | Collection of bulk composite soil samples (50 kg for sandy/clayey soils) from onsite testpits including their labeling, packing, storage & transportation to an approved testing laboratory.  | No   | 12   |            |              |
| A13  | Collection of composite bulk samples (from Water Bound Macadam/ Aggregate Base Course, Sub-Base and Sub-grade) from testpits including their labeling, packing, storage & transportation to an approved laboratory.   | No   | 45   |            |              |
| A14  | Collection of borrow area samples ( maximum weight 30-100 kg ) including their labeling, packing, storage & transportation to an approved laboratory.   | No   | 3    |            |              |
| A15  | Collection of water samples (if encountered) from boreholes including their labeling, packing, storage & transportation to an approved testing laboratory.  | No   | 6    |            |              |
| <b>Sub-Total A</b>   |   | Rs.  |      |            |              |
| <p>Establishment of coordinates and ground elevations of all the boreholes and testpits using Total Station are included in the scope of work. The coordinates should be provided with reference to a permanent local bench mark.</p> <p>All soil samples must be labelled, stored and transported as per ASTM. The area ratio and clearance ratio of the thin walled tube, should be in strict compliance with relevant ASTM standard.</p> <p>Contractor will be responsible for arrangement of Personal Protective Equipments (PPEs) such as safety helmets and jackets for NUSPAK site supervisory / visiting staff.</p> <p>The preferred method of drilling is straight rotary / percussion boring will be allowed only in case gravelly strata.</p> |   |      |      |            |              |

*Handwritten signature*

| REHABILITATION / UPGRADATION / DUALIZATION OF PQA MAIN ACCESS ROAD,<br>KARACHI |   |      |      |            |            |
|--|---|------|------|------------|------------|
| GEOTECHNICAL INVESTIGATIONS FOR BRIDGES AND CULVERTS                           |   |      |      |            |            |
| BILL OF QUANTITIES   |   |      |      |            |            |
| Sr. No.  | Description   | Unit | Qty. | Rate       | Amount     |
| C.   | LABORATORY TESTING  |      |      | (Rs.)      | (Rs.)      |
| B1   | Sieve analysis  | No.  | 120  |            |            |
| B2   | Hydrometer Analysis   | No.  | 15   |            |            |
| B3   | Liquid and plastic limits   | No.  | 30   |            |            |
| B4   | Specific Gravity  | No.  | 10   |            |            |
| B5   | Bulk density & dry density  | No.  | 20   |            |            |
| B6   | Consolidation with Swell Pressure Measurement                     | No.  | 6    |            |            |
| B7   | Unconfined compression (Soil samples)                             | No.  | 8    |            |            |
| B8   | Uniaxial compression (Rock samples)                               | No.  | 12   |            |            |
| B9   | Direct Shear Test   | No.  | 15   |            |            |
| B10  | Point Load Index on Rock Samples                                  | No.  | 8    |            |            |
| B11  | Modified Proctor Test   | No.  | 30   |            |            |
| B12  | 3-point soaked CBR  | No.  | 30   |            |            |
| B13  | Los Angles Abrasion Test  | No.  | 2    |            |            |
| B14  | Sand Equivalent   | No.  | 2    |            |            |
| B15  | Sulphate content of soil  | No.  | 6    |            |            |
| B16  | Chloride content of soil  | No.  | 6    |            |            |
| B17  | Organic matter content of soil                                    | No.  | 5    |            |            |
| B18  | Complete chemical analysis of water samples i/c TDS, Cl, SO4 & pH | No.  | 6    |            |            |
| <b>Sub- Total C</b>  |   |      |      |            | <b>Rs.</b> |
| <b>Name Of Laboratory:</b>   |   |      |      |            |            |
| <b>Total (A+B)=</b>  |   |      |      | <b>Rs.</b> |            |
| <b>Say</b>   |   |      |      | <b>Rs.</b> |            |

