

# NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED

NESPAK HOUSE: 1-C, Block-N, Model Town Extension, Lahore - 54700, Pakistan

ENVIRONMENTAL & PUBLIC HEALTH ENGINEERING DIVISION



Ref: 4520/11/MU/01/3065

Date: March 16, 2026

DETAILED DESIGN AND CONSTRUCTION SUPERVISION/IMPLEMENTATION OF LOCAL AREA DEVELOPMENT PROGRAMME (LADP), PUBLIC HEALTH, LIVELIHOOD DEVELOPMENT AND DOWNSTREAM FISHERIES PLAN

## 1.5 MW THOOTHY MINI HYDROPOWER PROJECT DISTRICT KOHISTAN UPPER, KPK

### GEOTECHNICAL INVESTIGATIONS

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

Dear Sir,

Bids (**Technical and Financial**) are invited through EPADS (in accordance with the **BOQ** and **qualification criteria** uploaded on EPADS) 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 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 28 m depth below existing ground level (EGL), by straight rotary drilling / percussion boring method, core drilling in bedrock, excavation of test pits, performance of SPTs in boreholes, performance of field density tests in test pits, performance of field permeability tests, collection of disturbed/undisturbed soil samples, collection of rock core samples, collection of samples from rock quarries and fine aggregate sources, 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 Drilling Rigs/ Percussion Sets Required	Time for Completion of Field Investigations	Time for Completion of Laboratory Testing	Total Time for Completion of Field & Laboratory Investigations
1	2	45 days	30 days	75 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 NESPAK engineers/geologists and the successful bidder shall mobilize to the site on three 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 NESPAK 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 borehole, test pit and permeability logs, summary of laboratory test results and detailed laboratory test results to NESPAK, within the contract period. **A premium of up to 25 % will be admissible on the official rates of the laboratory (subject to quoted rate), 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 laboratory should be provided by the contractor for approval of the Engineer.**

The basis of payment shall be the actual work carried out and approved by the Engineer, as measured by the Contractor and certified by the Engineer and valued at the rate and prices as quoted by you in your bid. The stages of payment shall be as under:


First (1 <sup>st</sup> ) Payment	Upon completion of minimum 50 % field work and submission of an invoice.
Second (2 <sup>nd</sup> ) Payment	Upon completion of 100 % field work and submission of an invoice.
Final Payment	Upon completion of 100 % work and submission of an invoice.

**The bidders shall submit a bid security amounting to Rs. 200,000/- before the bid submission deadline in the form of pay order or bank draft in favor of M/s NESPAK.**

Your **most competitive** bids (**inclusive of all taxes**) in accordance with the BOQ and qualification criteria, must be submitted through EPADs by 1100 hours on or before April 07, 2026. Technical bids would be opened on the same day at 1130 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 bidding process and the execution of entire work shall be carried out in accordance with the terms and conditions of the General Bidding Documents for Geotechnical Investigations available at NESPAK website ([www.nespak.com.pk](http://www.nespak.com.pk)).

for National Engineering Services Pakistan (Pvt.) Limited

  
(MUHAMMAD UMER)  
Project Manager  
E&PHE Division

**1.5 MW THOOTI MINI HYDROPOWER PROJECT, DISTRICT KOHISTAN UPPER, KP**

**GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

<b>Sr. No</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rates (PKR)</b>	<b>Total Amount (PKR)</b>
<b>B</b>	<b>Laboratory Testing</b>				
B1	Grain Size Analysis	Nos.	38		
B2	Hydrometer Analysis	Nos.	8		
B3	Atterberg Limits (LL,PL,PI)	Nos.	15		
B4	NMC (Natural Moisture Content) and Bulk Density Test	Nos.	30		
B5	Un-confined compression test (Soil)	Nos.	10		
B6	Un-confined compression test (Rock Core)	Nos.	25		
B7	Direct Shear Test (Drained)	Nos.	8		
B8	Specific Gravity Test	Nos.	10		
B9	Consolidation with Swell Potential Measurement Test	Nos.	3		
B10	Modified Proctor Compaction	Nos.	9		
B11	Sulphate, Chloride and Organic Content of Soil	Nos.	5		
B12	Complete chemical analysis of water samples i/e TDS, Cl, SO4 & pH	Nos.	3		
				<b>Sub-Total (B)</b>	
				<b>TOTAL (A+B)</b>	

**1.5 MW THOOTI MINI HYDROPOWER PROJECT, DISTRICT KOHISTAN UPPER, KP**

**GEOTECHNICAL INVESTIGATIONS  
BILL OF QUANTITIES**

Sr. No	Description	Unit	Qty	Rates (PKR)	Total Amount (PKR)
<b>A</b>	<b>Field Investigation</b>				
A1	Mobilization and demobilization of straight rotary / heavy percussion drilling rig at site including shifting from one investigation point to another.	L.S	Job		
A2	Drilling of boreholes in overburden soils/Gravel soil up to a maximum depth of twenty eight (28) meter by straight rotary in bedrock and heavy percussion method in overburden soil including backfilling of boreholes to their original position. The scope of work shall also include logging of boreholes by a professional geologist / geotechnical engineer, labeling, preservation, transportation and photography of the soil samples.	L.M.	72		
A3	Drilling of boreholes in Rock (NX Size in General) up to a maximum depth of ten (10) meter below rock strike level and backfilling of boreholes using cement/ sand/ bentonite slurry. The scope of work shall also include the logging of boreholes by a professional geologist / geotechnical engineer, preservation of core samples in core boxes, waxing of core samples, photography of rock cores and transportation of core samples to the laboratory.	L.M.	70		
A4	Performance of Standard Penetration Tests (SPTs) / Dutch Cone Penetration Tests (DCPTs) in boreholes (where possible) along with collection of SPT samples/core barrel samples at 1 m depth interval in general, or as specified by the Consultant Representative at site, including their labelling, packing, storage & transportation to an approved material testing laboratory.	No.	55		
A5	Collection of Undisturbed Samples (UDS) from boreholes, including their labeling, packing, storage & transportation to an approved laboratory.	No.	10		
A6	Collection of small disturbed soil samples from boreholes including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	25		
A7	Performance of Permeability tests in boreholes.	No.	8		
A8	Performance of Water pressure tests with 3 to 5 m column in drilled holes.	No.	18		
A9	Excavation of test pits up to 3.0 m depth below ground level including backfilling of pits to original condition.	L.M.	42		
A10	Performance of insitu density tests in test pits by sand replacement method including sampling for moisture content determination, their labeling, packing, storage & transportation to an approved laboratory.	No.	28		
A11	Collection of Undisturbed Samples (Block Samples) from test pits, including their labeling, packing, storage & transportation to an approved laboratory.	No.	5		
A12	Collection of composite bulk samples from test pits including their labeling, packing, storage & transportation to an approved laboratory.	No.	15		
A13	Collection of water samples (if encountered) from boreholes/testpits including their labelling, packing, storage & transportation to an approved testing laboratory.	No.	3		
<b>Sub-Total (A)</b>					

Establishment of coordinates and ground elevations of all the boreholes and testpits are included in the scope of work. The coordinates should be provided with reference to local bench marks established at site.

The preferred method of drilling in overburden / granular soil is heavy percussion while for bedrock is by rotary drilling.

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

All soil/rock 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.

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**1.5 MW THOOTHI MINI HYDROPOWER PROJECT, DISTRICT KOHISTAN UPPER**

**GEOTECHNICAL INVESTIGATIONS**

**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 Eligibility Based on Past Performance with NESPAK**

Firms that have previously undertaken geotechnical investigation assignments for NESPAK and have received an unsatisfactory performance certificate within the past six (06) months shall be disqualified.

**1.4 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.

<b>Sr. No.</b>	<b>Position</b>	<b>Qualification*</b>	<b>No.</b>	<b>Minimum Experience (Years)</b>
1	Technical Manager	B.Sc. Civil Engg.	1	5
2	Site Geologist/ Supervisor / Engineer	B.Sc. Geology/ B.Sc. Civil Engg. / B.Sc. Geological Engg.	2	2

Sr. No.	Position	Qualification*	No.	Minimum Experience (Years)
3	HSE Supervisor	HSE Certification course	1	1
4	Driller	Literate	2	3
5	Skilled Labor	-	As Required	-

### 1.5 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 sufficient 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.	2
3	Casing sets having various diameters for all types of boring at least 15 m in length with casing bits	2
4	Core barrels (single tube & double tube) including coring and casing bits	2 each
5	Standard penetration test equipment complete in all respects including all rods, split spoon sampler, hammer and containers etc.	2
6	Shelby/Denison/Pitcher samplers	2 each
7	UDS tubes & Split Spoon Samplers	As Required
8	Hydraulic jacks with all accessories for the extraction of casings	1
9	Electrically operated sounder for groundwater level measurement	1
10	Test pit excavation equipment complete in all aspects	As required
11	Field density test apparatus complete in all respect as per relevant ASTM standard	As required
12	Field Permeability test apparatus complete in all respect as per relevant standard	As required
13	Wooden box for the preservation of undisturbed soil samples and rock cores	As required
14	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.

### ***1.6 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. 15 million. Documentary proofs of the same shall be submitted in the form of letter of awards, completion certificates, etc.

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.

### ***1.7 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.

### ***1.8 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.

## 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 & PRA







**Financial Capabilities***Name of Applicant:* \_\_\_\_\_

Year	Annual Turnover (in PKR)
2023 – 2024	
2022 – 2023	
2021 – 2022	

*Note: Financial soundness certificate from the bank(s) as specified in section 1.6 must be provided by the Applicant*








# GEOTECHNICAL INVESTIGATION PLAN FOR 1.5 MW THOOTHI MHPP

Coordinates are given in Table-1 as follows:

## Legend

-  Bar thooti
-  Boreholes & Test Pits
-  Masjid

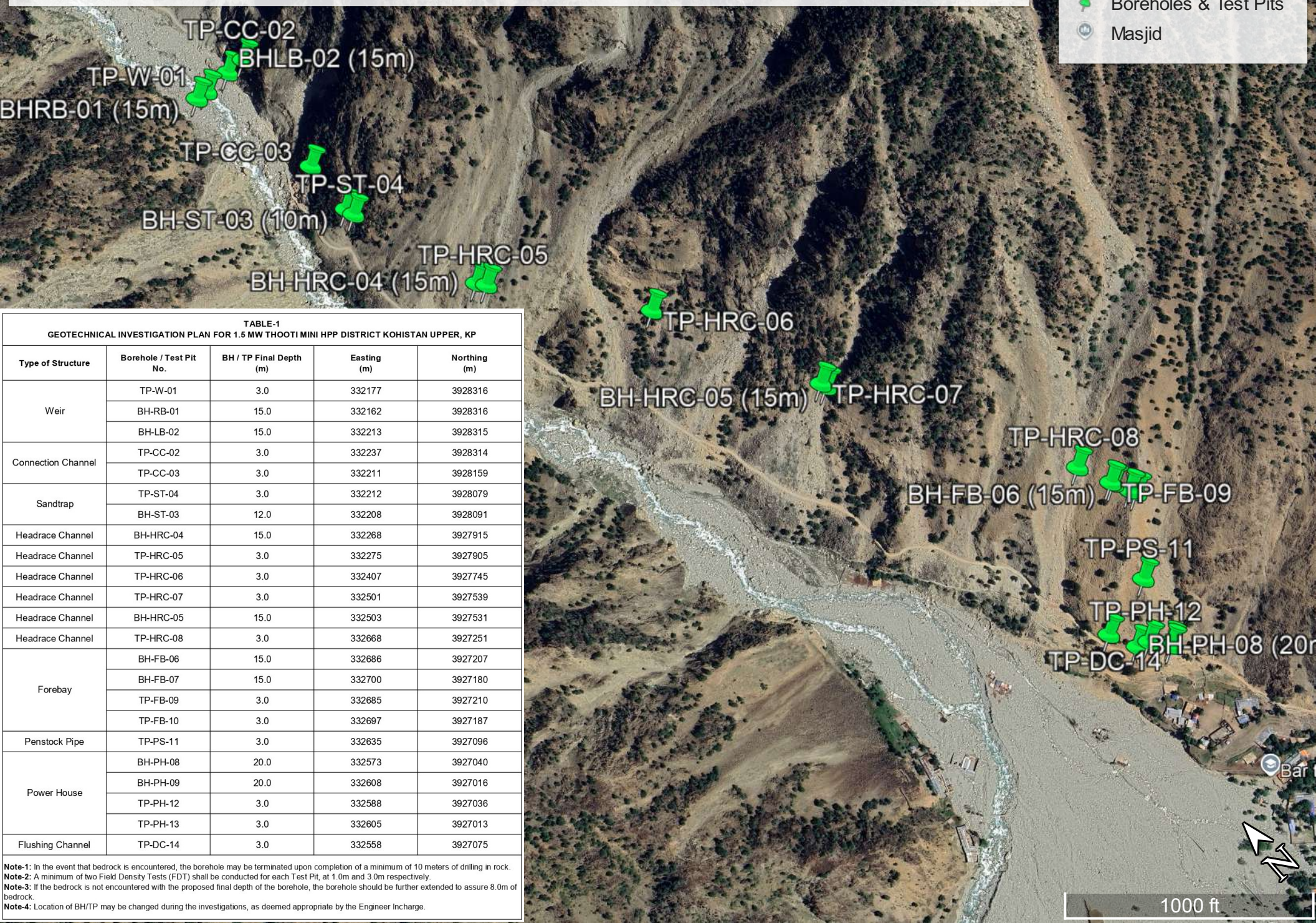


TABLE-1

GEOTECHNICAL INVESTIGATION PLAN FOR 1.5 MW THOOTHI MINI HPP DISTRICT KOHISTAN UPPER, KP

Type of Structure	Borehole / Test Pit No.	BH / TP Final Depth (m)	Easting (m)	Northing (m)
Weir	TP-W-01	3.0	332177	3928316
	BH-RB-01	15.0	332162	3928316
	BH-LB-02	15.0	332213	3928315
Connection Channel	TP-CC-02	3.0	332237	3928314
	TP-CC-03	3.0	332211	3928159
Sandtrap	TP-ST-04	3.0	332212	3928079
	BH-ST-03	12.0	332208	3928091
Headrace Channel	BH-HRC-04	15.0	332268	3927915
Headrace Channel	TP-HRC-05	3.0	332275	3927905
Headrace Channel	TP-HRC-06	3.0	332407	3927745
Headrace Channel	TP-HRC-07	3.0	332501	3927539
Headrace Channel	BH-HRC-05	15.0	332503	3927531
Headrace Channel	TP-HRC-08	3.0	332668	3927251
Forebay	BH-FB-06	15.0	332686	3927207
	BH-FB-07	15.0	332700	3927180
	TP-FB-09	3.0	332685	3927210
	TP-FB-10	3.0	332697	3927187
Penstock Pipe	TP-PS-11	3.0	332635	3927096
Power House	BH-PH-08	20.0	332573	3927040
	BH-PH-09	20.0	332608	3927016
	TP-PH-12	3.0	332588	3927036
	TP-PH-13	3.0	332605	3927013
Flushing Channel	TP-DC-14	3.0	332558	3927075

**Note-1:** In the event that bedrock is encountered, the borehole may be terminated upon completion of a minimum of 10 meters of drilling in rock.  
**Note-2:** A minimum of two Field Density Tests (FDT) shall be conducted for each Test Pit, at 1.0m and 3.0m respectively.  
**Note-3:** If the bedrock is not encountered with the proposed final depth of the borehole, the borehole should be further extended to assure 8.0m of bedrock.  
**Note-4:** Location of BH/TP may be changed during the investigations, as deemed appropriate by the Engineer Incharge.

1000 ft