Section III: Schedule of Requirements

**RFQ Reference: AWF/ET/March/2024**

**Summary of Requirements**

Perform Hydrogeological & Geophysical groundwater survey for the site and confirm the potential of the proposed borehole location for high yield (at least 2.5 litres per second) & Drilling and Installation of a hand pump borehole of at least 60M Deep in Abergina kebele, Debark Woreda, Ethiopia.

1. **Technical Specifications for Goods**

| **Item** | **Description** | **Unit Meas** | **Quantity** | **Details of goods offered.** Bidder to complete |
| --- | --- | --- | --- | --- |
|  | **Hydrogeological & Geophysical Survey** |  |  |  |
|  | Perform a Hydrogeological & Geophysical groundwater survey for the site and confirm the potential of the proposed borehole location for high yield (at least 2.5 litres per second) at a minimum of 70m. | L.S | 1 |  |
|  | Prepare and submit a of hydrogeological & geophysical survey report including description of the geology of the site, hydrogeological assessment with notes on ground water table levels, assessment of potential yield, report on expected water quality, estimate of required borehole depth (at least 60 meter) and plan layout of the site confirming borehole location with GPS coordinates | L.S | 1 |  |
|  | Application and acquisition of a borehole drilling permit from relevant authorities and submit to AWF before commencing the works. | L.S | 1 |  |
|  | **Total Bill No. 1** |  |  |  |
|  | **Well Drilling and Installation Work** |  |  |  |
|  | **General Item** |  |  |  |
|  | Mobilization of man power, drilling rig tools & construction material | L.S | 1 |  |
|  | Inter site mobilization | L.S | 1 |  |
|  | Inter woreda mobilization | L.S | 1 |  |
|  | Demobilization ofman power, drilling rig tools & construction materials | L.S | 1 |  |
|  | Site clearing before and after construction | L.S | 1 |  |
|  | Excavation of mud pit | m3 | Unit Rate |  |
|  | **Sub total** |  |  |  |
|  | **Bore hole Drilling** |  |  |  |
|  | **Drilling in all formation** |  |  |  |
|  | DTH Rotary or MUD Rotary drilling with 12-inch bit diameter for 10’’ surface casing | m | 6 |  |
|  | DTH Rotary or MUD Rotary drilling with 9 7/8-inch bit diameter | m | 54 |  |
|  | DTH Rotary or MUD Rotary drilling with 7 7/8-inch bit diameter | m | Unit Rate |  |
|  | **Sub total** |  |  |  |
|  | **Well Logging** |  |  |  |
|  | Lithological (cutting) sampling and logging to be taken at 2m interval | L.S | 1 |  |
|  | **Sub total** |  |  |  |
|  | **Supply and installation of casings** |  |  |  |
|  | Supply and Install 6-inch ID PVC Blind casing | m | Unit Rate |  |
|  | Supply and Install 6-inch ID PVC Screen casing | m | Unit Rate |  |
|  | Supply and Install 5-inch ID PVC Blind casing | m | 41 |  |
|  | Supply and Install 5-inch ID PVC Screen casing | m | 20 |  |
|  | Supply and Install Steel Surface casing 10-inch ID | m | Unit  Rate |  |
|  | **Sub total** |  |  |  |
|  | **Gravel packing and Well Development** |  |  |  |
|  | Supply and pack selected well rounded river gravel (5 to 8 mm diameter grain size) | m3 | 5 |  |
|  | Well cleaning and development | Hr. | 4 |  |
|  | **Sub total** |  |  |  |
|  | **Well Completion works** |  |  |  |
|  | Pump stand sit steel casing 8-inch ID | m | 1.3 |  |
|  | Cement grouting up to 5-meter depth from ground level with mass concrete (1:3:6 mix) | m | 5 |  |
|  | Well head construction | L.S | 1 |  |
|  | Supply and installation of Hand pump (Afridev)for a water level | L.S | 1 |  |
|  | Supply and installation of Hand pump (Indian Mark II)for a water level | L.S | Unit Rate |  |
|  | **Sub total** |  |  |  |
|  | **Preparing Well log document** |  |  |  |
|  | Prepare end report for the productive well which includes geological column, well profile, drilling diameter, casing installation, estimated well yield, etc. 4 copies including soft copy | L.S | 1 |  |
|  | Prepare end report of abandoned wells that is well drilling which includes geological column, well profile, drilling diameter, etc. including reason for the abandonment of each well 4 copies including soft copy | L.S | Unit Rate |  |
|  | **Sub total** |  |  |  |
|  | **Total Bill No. 2** |  |  |  |
|  | **Bill No.3 Fence Work** |  |  |  |
|  | Supply and erect fence of 12 lines of barbed wire 150mm spacing with cross diagonal on 2.2m high angle iron posts of size 50\*50\*3mm spaced c/c @ 1.5m and 6mm diameter rebar welded to angle iron embedded in 300\*150mm concrete foundation to a depth of 600mm. | M | 24 |  |
|  | Supply and erect 1500\*1900 mm gate of RHS frame 30\*30\*2mm between two 100\*100\*3mm RHS poles embedded with 300\*300mm concrete foundation to a depth of 600mm with complete hinges and lock. | No | 1 |  |
|  | **Sub total** |  |  |  |
|  | **Total Bill No. 3** |  |  |  |
|  | **Bill No.4 Construction of  cattle trough (only 1 cattle trough )** |  |  |  |
|  | **Earth Work** |  |  |  |
|  | 5..8m with 2.8m area Site clearing up to a depth of 20cm to remove top soil | M2 | 16.24 |  |
|  | Bulk excavation for foundation at a depth of 60cm | M3 | 9.744 |  |
|  | Cart away excavated materials to a distance of 100m | M3 | 8.12 |  |
|  | 38 cm basaltic or equivalent hard core, well rolled, consolidated and blinded with crushed stone to the required thickness | M3 | 6.17 |  |
|  | **Sub total** |  |  |  |
|  | **Concrete Work** |  |  |  |
|  | Placing of 7cm thick lean concrete(1:3:6) above hard core for foundation | M3 | 1.14 |  |
|  | Make 15cm thickness RC water tight floor slab with mix ratio of 1;2;3 | M3 | 2.436 |  |
|  | 10cm thickness RCC tie beam for the top of the cattle trough (above the masonry work) with mix ratio of 1;2;3 | M3 | 0.688 |  |
|  | Reinforcement bar for cattle trough water tight floor slab and cover for the top of masonry work, cost including tying wire, cutting and bending |  |  |  |
|  | Φ10mm | Kg | 183.7 |  |
|  | Φ8mm | Kg | 85.58 |  |
|  | **Provide and fix Zigba wooden form work** |  |  |  |
|  | a) for water tight floor slab and cover of masonry work | M2 | 10.8 |  |
|  | **Sub total** |  |  |  |
|  | **Masonry work** |  |  |  |
|  | Making 60cm height non-vesicular basaltic or equivalent stone masonry wall with 1:3 stone and sand mortar below water tight floor slab(17.2\*0.4\*0.6= length, width and depth respectively) | M3 | 4.128 |  |
|  | 60 cm height basaltic or equivalent hard core, well rolled, consolidated and blinded with crushed stone to the required thickness below water tight floor slab(5\*2\*0.6=Length, width and depth respectively) | M3 | 6 |  |
|  | Making 70cm height non-vesicular basaltic or equivalent stone masonry wall with 1:3 stone and sand mortar above water tight floor slab (17.2\*0.4\*0.7=Length, width and depth respectively) | M3 | 4.816 |  |
|  | **Sub total** |  |  |  |
|  | **Finishing work** |  |  |  |
|  | Making 3 coats plastering the inside walls of the collection chamber with 1:3 cement and sand mix ratio | M2 | 12.04 |  |
|  | Making 2 coats plastering the outside walls of the collection chamber with 1:3 cement and sand mix ratio | M2 | 20.64 |  |
|  | **Pipe fittings** |  |  |  |
|  | Lay and extend the HDPE pipe PE 100,PN16 and OD 40mm with necessary fittings from the shallow well to cattle trough | m | 10 |  |
|  | tee OD 40mm,PN16 and PE100 | No | 1  1.00  2.00  2.00  2.00  1.00 2.00 |  |
|  | Reducer from OD40mm to 32mm | No | 1 |  |
|  | Male adapter | No | 1 |  |
|  | **Supply & fix drainage and fittings** |  |  |  |
|  | Medium class GS pipe DN 25mm | m | 2 |  |
|  | Medium class GS elbow DN 25mm | m | 2 |  |
|  | Male adapter | No | 1 |  |
|  | Internally threaded GS Elbow 90-degree DN 25mm | No | 2 |  |
|  | End plug GS DN 25mm | No | 1 |  |
|  | **Sub total** |  |  |  |
|  | **Total Bill No. 4 for 1 cattle trough** |  |  |  |
|  | **Total Bill No. 4 for 2 cattle troughs** |  |  |  |
|  | **Bill No.5 Drainage work** |  |  |  |
|  | **5.1 earth work** |  |  |  |
|  | 60cm depth ,50cm wide and 10m long drainage line trench excavation for concert work with 1:2:3 ratio | L.S. | 1 |  |
|  | Back fill the drainage line after concrete work | LS. | 1 |  |
|  | **Sub total** |  |  |  |
|  | **Total Bill No. 5** |  |  |  |
|  | **Total Bill No. 1,2 ,3, 4 and 5** |  |  |  |
|  | **Vat 15%** |  |  |  |
|  | **Grad Total** |  |  |  |
|  | **Bill No. Borehole Completion Report** |  |  |  |
|  | Prepare and submit preliminary and final borehole report within one week of completion of borehole, including geophysical testing analysis, GPS coordinates, casing details, filter pack details, pump cylinder installation depth and pump type, water quality results, stakeholders’ signatures, during and after drilling photographs | LS | **1** |  |
|  | **Total Bill No. 6** |  |  |  |
|  | **Bill No. Other Requirements** |  |  |  |
|  |  |  |  |  |
|  | Mobilization of temporary facilities, drilling unit, equipment materials, personnel and all other required supplies to the site to be within 5 (five) days of contract signing | **LS** | **1** |  |
|  | Quotation Validity of at least 45 days from the submission deadline date |  |  |  |
|  | Project completion is forty five (45) days from contract date |  |  |  |
|  | Minimum of one (1) year warranty |  |  |  |
|  | Demobilization, including site cleaning and restoration as needed before provisional acceptance. | **LS** | **1** |  |
|  | **Total Bill No. 7** |  |  |  |
|  | **Total Bill No. 1,2 ,3, 4,5,6 and 7** |  |  |  |
|  | **Vat 15%** |  |  |  |
|  | **Grad Total** |  |  |  |