



---

## TENDER TERMS OF REFERENCE FOR DRILLING (05) BOREHOLES IN YEI

YEI, REF. NO. PREQ-2914

### **BACKGROUND/INTRODUCTION**

Islamic Relief is an independent humanitarian and development UK based organization, with an active presence in over 40 Countries across the globe, we strive to make the world a better and fairer place for people still living in poverty. Islamic relief began its humanitarian operation in South Sudan in 2004 focusing on providing lifesaving aid and implementing developmental Programmes to support people affected by flood, drought and Conflict establishing three sub offices in Narus (Kapoeta East), Wau, Warrap. A satellite office in Yei and Main office in Juba.

As well as responding to disasters and emergencies, Islamic Relief promotes sustainable economic and social development by working with local communities - regardless of race, religion or gender.

### **Our vision:**

Inspired by our Islamic faith and guided by our values, we envisage a caring world where communities are empowered, social obligations are fulfilled and people respond as one to the suffering of others.

### **Our mission:**

Exemplifying our Islamic values, we will mobilize resources, build partnerships, and develop local capacity, as we work to:

Enable communities to mitigate the effect of disasters, prepare for their occurrence and respond by providing relief, protection and recovery.

Promote integrated development and environmental custodianship with a focus on sustainable livelihoods.

Support the marginalized and vulnerable to voice their needs and address root causes of poverty.

We allocate these resources regardless of race, political affiliation, gender or belief, and without expecting anything in return.

## INTRODUCTION

IRSS through funding from IR USA through the Global Famine Prevention response project (GFPR) is responding to priority needs of the conflict affected population of Yei County. IR is responding to priority needs of the conflict affected population in Yei county of Central Equatoria state. With funding from IR-USA, IRSS intends to improve access to clean drinking water, sanitation and hygiene status in targeted bomas of Yei County through construction of new boreholes completed with hand pumps. This project intends to drill 05 new boreholes equipped with Indian MK II hand pumps.

IRSS is therefore sourcing for a competent company to carry out drilling and completion of the five (05) boreholes completed with Indian MK II/III hand pumps in and out skirts of Yei town.

These **TENDER FOR (05) BOREHOLE DRILLING, REF. NO. PREQ-2914** aid is part of a major Islamic Relief seasonal and emergency programme that has now provided thousands of dollars' worth of assistance to the people of in Central Equatorial Yei), South Sudan.

## DELIVERY DETAILS

SN	Village	Boma	Payam	GPS Coordinates	
				N	E
1	Little Angel nursery and primary school	Jigomoni	Yei	04 <sup>0</sup> 05'42.6"	030 <sup>0</sup> 39'23.2"
2	Kugango Nursery and primary school	Ronyi	Yei	04 <sup>0</sup> 05'05.1'	030 <sup>0</sup> 41'24.6"
3	Lokobero	Jansuk	Yei	04 <sup>0</sup> 07'01.7"	030 <sup>0</sup> 39'41.8"
4	Dam one	Sopiri	Yei	04 <sup>0</sup> 04'11.1"	030 <sup>0</sup> 39'29.1"
5	Kondeko PHCU	Yei	Yei	04 <sup>0</sup> 05'41.8"	030 <sup>0</sup> 39'19.9"

## BILL OF QUANTITIES

Please also use our table when filling the prices. If you do not have the item just keep it empty. Your offer should be for the quantity that we request, not less and not more.

Please only use USD (\$) as the currency for your offers as per the guidelines.

## DELIVERY LOCATION; YEI

### Bill of quantities for drilling of one borehole

ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY	RATE - USD	AMOUNT -USD
(A)	<b>Borehole drilling</b>				
01	Preliminaries: Physical survey and assessment of the sites.	job	1		
02	Mobilization, transportation of drilling equipment to site, inter site and back from site, including setting of equipment and camping site.	job	1		
03	Carry out geophysical survey to identify the most potential site. At least two vertical and two horizontal VES.	survey	1		
04	Carry out drilling of 7- 8 inches diameter hole , throughout all types of strata ( soil formations ) using DTH hammer, as well as air-foam drilling whenever deemed necessary.	meter	100		
05	Allow for taking samples of drilling cuttings at 6.00m intervals	meter	20		
06	Supply and install 5 inches plain casing nominal internal diameter UPVC	meter	88		
07	Supply and install 5 inches nominal internal diameter UPVC slotted casing with end cap.	meter	12		
08	Gravel packing material shall be supplied and install all along the aquifer section of the well. The material shall be 2mm – 4 mm diameter, clean, well rounded siliceous gravel with not more than 5% of non-siliceous materials.	M <sup>3</sup>	2.00		
09	Sanitary seal should be installing at an appropriate depth, not less than 1.5m using recommended grout materials	M <sup>3</sup>			
10	Allow for flushing of the borehole for not less than six hours to assess the well yield	job	01		

11	Provide and install 8 inches diam. Permanent casing up to the rock/hard formation	Metre	06		
12	Allow to carry out water quality test from a recognized institution, both for physical and chemical parameters as per the policy of the country.	Sample	05		
(B)	<b>Hand pump installation</b>				
13	Supply and install Indian MK II/III hand pump, complete set comprising head assembly, pedestal, water tank, and cylinder with G.I.Pipes 1/4". Pump depth determining factors, < 50.00m Indian MK II while > 50.00 pump depth is Indian MK III.	set	1		
14	General excavation of top soil to depth not exceeding 200 mm ( assume 3x2m channel )	M <sup>3</sup>	1.50		
15	Provision and placement of BRC wire mesh as reinforcement to the apron , provision and laying of grade 2 reinforced concrete 1:2:4 in plate form and drainage channel	M <sup>3</sup>	5.20		
16	Provision and laying of mortar screed (1:3) on the plate form as well as the drainage channels trowelled smooth.	job	1		
17	Installation of G.I.pipes pipes 1/4" , 12mm MS connecting rods, water tank assembly, cylinder assembly and head assembly , to depth 60.00 metres ( otherwise as determined by the depth of the cylinder). .	Set	1		
18	Allow but excavation of 1.50m diameter x 2.00m deep soak away pit filled up with recommended filling materials, well covered with plastic sheet and soil, in soak away pit well completed.	No	1		
19	Supply and install a 60 Watt, 6,000 lumens, and public solar lights, integrated with a solar panel, well fixed on a 4 inches dia. G.I. pipe 6.00m high, razor wire will be rolled on the foot of the pole to provide additional protection. The solar light is expected to have night and motion sensors, operate at 30% when at idle mode and 100% when darkness and motion is detected.	No	01		

20	Carry out general land scaping of the borehole site, restoring back the area to its original shape. 7.00 radius.	No	1		
21	Provide and allow for fixing in place metallic sign post as described in the TOR.	No	1		
	Subtotal (1)				
Grand total: Subtotal (1) x 05 =					

### General Notes

The distance to each drilling site is estimated to 7 kilometres radius, accessibility is good. The job is expected to be accomplished in 35 days, including mobilisation, decommissioning and handing over. Each water point will be equipped with public solar lights, that would provide light to enable safe access to the water points after sun set.

The work will involve:

#### (a) Geophysical Survey/Profile Taking

The selected company is expected to carry out geophysical survey before drilling commences, study is expected to use both secondary and primary data in the exercise; Secondary data will involve desk study of available information/data on existing boreholes, drill logs, reports and maps. The outcome of the study and recommendations is to be shared with IRSS before commencement of drilling work starts.

The geophysical investigations will be carried out in a multi-step approach:

- a) Desk study: Review of existing data, topographical maps, satellite images, existing studies and borehole site investigations in the area, geological reports and maps (if available), borehole and surface water records, etc.
- b) Findings.
- c) Compilation, analysis, and evaluation of the gathered data and information.
- d) Site selection and reporting.

#### (A) BOREHOLE SITING:

The field investigations **MUST** be undertaken by highly qualified hydro-geologists, will be responsible for planning, execution and interpretation of all geophysical data, reporting and selection of the most suitable site for the drilling. The most promising site selected for drilling shall be marked with a concrete marker and indicated on a sketch map. The recommended site identified has to be well communicated to the community and the community should agree on the site through a community meeting. Any geological difficulty arising making proposed sites by the community not suitable for hydrogeological reasons such that the promising sites falls outside the preferred one by the

community, all reasons for such changes shall be clearly communicated to the community and ensure they understand and agree on that, if the next high potential site is going to fall beyond the recommended distance, 1,000 metres.

### **(b) Bore Well Drilling Requirements**

The drilling of the borehole should be carried out according to the characteristics of the soil formation of the site using appropriate drilling technology, as per result of the hydro geophysical survey while using proper drilling tools, drill pipes, casing pipes with centralizers to ensure that casing string is central within the hole.

- The expected bore well diameter is 7.0"-8.0" (as determined by nature of the soil)
- The expected depth of the bore well is between 65 .00m- 100.00m
- The expected yield of the bore well is a minimum 2,500 liters/hour.

**Screen casing** – factory made UPVC slotted 5 inches nominal internal diameter screens will be used throughout the aquifer zone. The slot size and screen length will depend on the aquifer materials and aquifer thickness placed at appropriate positions and depth. Screens should be of an ISO standard and having the specification UPVC class 9/10 drinking water standard non- toxic.

**Plain casing** – 5. Inches nominal internal diameter casing should be of ISO standard UPVC class 10 drinking water standard, 3 meters long with threaded joints , well screwed , appropriately placed in the correct positions in the well .

**Permanent casing** – plain casing of 8 inches diameter Permanent casing must go up to 6 m or up to hard formation to ensure that it seals off all materials from surface runoff entering the well and sanitary grout is inserted to a depth of not less than 1.50m from ground level .

**Development** – on completion of drilling , an appropriate development method will be applied this will include continuous flushing for a period not less than 4 hours , meanwhile estimating the discharge rate . This is necessary to obtain the maximum yield of the well.

**Gravel packing** – Gravel packing material shall be supplied and install all along the filter (aquifer) section of the well. The material shall be 2mm – 4 mm diameter, clean, well rounded siliceous gravel with not more than 5% of non- siliceous materials. Sanitary seal should be installed at an appropriate depth using grout cement.

**Pumping test** - Pumping test will be for a period not less than 8 hours in which the first 4 hours is for step draw down while the 4 hours for continuous test . The discharge at this point will correlate to the discharge during flushing.

**Recovery test** – recovery test should be done for at least 2 hours or such time when there is at least 80% of the static water level noted.

**Water Quality Analysis** – water quality test to be conducted at the d end of the drilling to determine the status of the water , considering the available parameters recommended for testing. Ensure borehole is chlorinated before opening to users.

### **Bore-hole Installation:**

Successful borehole will be installed with either Indian MK II or I MK III hand pump will be installed as follows : < 50 m pump depth will be Indian MK II and > 51 m pump depth will be Indian MK III

- All platforms (aprons) should conform to south Sudan standards from Ministry of water resources and UNICEF.
- All drainage channels should be 6m long. Ensure boreholes are chlorinated and closed for 8 hours before use .

### **1. Objectives :**

To ensure that, five boreholes successfully constructed, hand pump well fixed and aprons are of good standard. Ensure the boreholes produces good amount and quality of water as required.

### **2. Tasks and expected days of work**

- The contractor is expected to carry out the job accordingly, while assigning specific and clear task of works to specific team group e.g the hydrogeologist for geophysical survey, well logging and aquifer behavior , water engineer / technicians for test pumping and installation of hand pumps, drillers for good drilling operations .The whole work is expected to take 20 days including mobilization to and from the site.

### **4 Reporting**

- Contractor to report on each phase of work successfully completed, this includes: Phase (1) Preliminary report of geophysical surveys work conducted on the five proposed sites (2) drilling completed and test pumping done (3) Hand pump installation, apron construction and fixing of sign posts. .

### **5 Handing over**

- Final inspection will be jointly conducted with the directorate of rural water supply and sanitation, community representatives various components of the borehole will be inspected and verified, according to the check list . In case of defaults in any component, has to be rectified before final handing over is done.
- After the facility is handed over , IRSS will carry out post construction monitoring for a period of three months before the liability ( retention) money is settled .

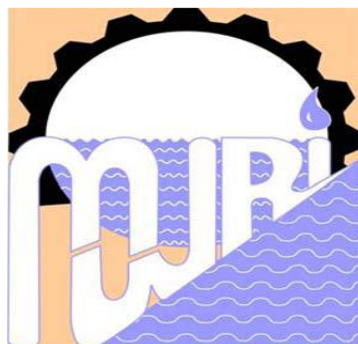
### **6 Visibility**

- A 0.80m height x 1.20m wide metallic sign post on 40mmx40mm hollow section frame, 21/2"x21/2" angled bar legs, 1.80m height stand ( legs) shall be properly and appropriately placed and completed .

Sample sign post



USA



MWRI

## **ISLAMIC RELIEF WORLDWIDE (IRW) SOUTH SUDAN PROGRAM**

**THIS BOREHOLE WAS CONSTRUCTED AND  
COMPLETED BY ISLAMIC RELIEF SOUTH SUDAN  
WITH FUNDING FROM IR USA**

**LOCATION: Yei county**

**Village:** (insert names of villages as per the list)

**IMPLEMENTATION PERIOD: 2021-22**



## APPENDIX 1

- a. Price
- b) Profile
- c) General Experience
- d) Specified Commodity Experience
- e) Delivery Location(s)
- f) Delivery Time
- g) Validity of Quotation
- h) Bank Statement (Deposits in 3 Months)
- i) Experience with IRSS

**NB. All above documents should be in the same sequence and divided by separators arrange chronologically from a to i failure to abide by may lead to disqualification from the process and extra marks is given for correct arrangement of the documents.**

All tenders are required to be submitted before **Monday 22<sup>th</sup> DEC 2021, 4.00 pm Local time** pursuant to the attached guidelines for submitting a quotation and be returned to; **HAND DELIVERY TO IRSS TENDER BOX** upon registration on the bid receipt form.

For any issues relating to the tender or its contents please email directly to; [IRSS.Tender@islamic-relief.or.ke](mailto:IRSS.Tender@islamic-relief.or.ke)

**All quotation providers are requested to fill in Appendix 1 and 2 below when submitting their proposal to IRW.**

## APPENDIX 2

### Summary of Bid Prices

<i>No.</i>	<i>Description</i>	<i>Total Price in USD (\$)</i>
<b>1</b>	<b>Grand Total Bid Price</b>	
<b>2</b>	<b>Discount Ratio (if any) ... % and the amount</b>	
<b>3</b>	<b>Grand Total after Discount</b>	

<b>4</b>	<b>Delivery time scales (in days)</b>	
----------	---------------------------------------	--

We have carefully checked and examined all bid documents and we are offering the costs above on a fixed basis and they are not subject to any changes or alterations including those due to currency fluctuations.

Total Price **USD (\$)**

**In words** [ \_\_\_\_\_ ]

Bidder's Signature

Stamp

Date

**Bidder is required to stamp this document with their legal company stamp no bid will be accepted without a genuine company stamp.**