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**BoQ FOR REHABILIATION OF SWAT IN KAKA MANYO COUNTY – BHA FUNDED PROJECT**

1. Background

With funding from BHA, DRC South Sudan is implementing a Humanitarian Outreach for Protection and Empowerment in Abyei, Upper Nile and Unity State respectful. Due to ongoing conflict in Sudan between the Rapid Support Forces and the Sudan Armed Forces, a majority of the population has been displaced to the Manyo County and other parts of the Country, where WASH facilities are limited. One location has been identified in in Kaka Manyo County for SWAT rehabilitation. Therefore, DRC South Sudan seeks a service provider, hereafter referred to as “the Contractor,” to carry out the following tasks: mobilizing machinery, conducting hydrogeological surveys, drilling the boreholes, developing the boreholes, testing to meet required standards, and constructing a water yard tower fitted with a storage tank according to DRC design, along with a complete solar submersible system.

1. Scope of the works (SOW)

DRC seeks the services of professional and reputable companies specialized in Surface Water Treatment (SWAT) systems to rehabilitate one SWAT plant in Kaka Manyo County where he will establish chain-link fence, repair/service generators and upgrade solar system as stated in the BoQ. The identified service provider(s) will also be required to buy materials, transport them and rehabilitate SWAT system. Bill of Quantities (BOQ)and technical designs for the SWAT plants are provided in annex I and II. The selected company will also be required to train four Water Point User Committees (WPUC). The WPUC will facilitate the identification of five community volunteers per SWAT system including at least one member of the PTA/SMC who will be trained on the basic operation and maintenance of the SWAT system by the construction company that will establish the SWAT systems. The volunteers will be equipped with the basic knowledge of running the SWAT system and a basic tool kit and will also be responsible for conducting minor maintenance and repair works. The volunteers will be youths/men and women resident in the community being served by the SWAT Systems. They should be willing to volunteer their time (with minimal incentives) on a rotational basis, to support the operation and maintenance of the SWAT system.

1. Supervision

The DRC will appoint a WASH/Shelter Team Leader (Area Manager) to supervise the works, hereinafter referred to as the “DRC Site Supervisor”. Certain decisions must be validated by the DRC WASH Technical Lead as listed in the following sections of the ToR. Condition and specifications of the equipment and materials utilized will be subject to physical inspection and approval by DRC Drilling Technical Lead and should be disclosed by the Contractor prior to mobilizing the materials to the site. The installation of the casing, gravel pack and complete pump testing must be done in the presence of the DRC Site supervisor.

1. Work force

The Contractor is expected to carry out all works as specified and in a professional manner. The Contractor shall carry out operations in accordance with the terms of the contract and to the satisfaction of DRC. The Contractor shall supply efficient and experienced staff.

The Contractor must provide a list of the workforce it intends to use for execution of the project.

The Contractor will maintain a complete drilling crew at the work site. If a member of the team quits for personal reasons or must leave because of illness or injury, the Contractor must replace the person as soon as possible, with a worker of similar experience. If the absence of one or more members of the drilling crew affects operations, the decision of whether to proceed will be at the discretion, and under the responsibility of the Contractor.

If the DRC Site supervisor is dissatisfied with the performance or attitude of members of the drilling crew, such members shall be informed of their shortcomings and warned by the Contractor. If no change results within a reasonable period, the Contractor will be notified and requested to take necessary measures to remove the unsatisfactory team member from the work site.

1. Equipment and Materials.

Materials that will form part of the complete works must be supplied new and never used. Materials must comply with the minimum specifications in the relevant codes. Materials not specified here must comply with the minimum specifications in the relevant codes of practice. Where a national standard does not exist for the material, the relevant British Standard shall apply. All materials that are to be temporarily or permanently installed in the SWAT during the works process are to be kept clean and away from contact with sources of contamination (hydrocarbons, effluent, animal matter etc.). Condition and specifications of the equipment and materials, particularly the casings, screens and gravel pack utilized will be subject to physical inspection and approval by DRC Drilling Technical Lead. The Contractor shall bear the responsibility to ensure that the casing materials are properly transported to, and stored on site, protected from heat, UV light and any other risks of damage. The DRC Site supervisor must confirm that all materials delivered to site meet the relevant specifications, before work commences.

1. Loss of equipment

Any equipment lost down hole must be removed by the Contractor or the borehole shall be considered unsuccessful. A replacement SWAT/borehole shall have to be constructed at the Contractor’s expense. In the unfortunate event that the Contractor cannot extract the foreign body, the Contractor shall not be entitled to further payments.

1. Headworks and Pumping Equipment

Upon reception of satisfactory water quality test results, the Contractor is to cast a concrete well head as listed in the BoQ.

All construction materials shall be mobilized to the site immediately after the completion of the pump test and shall be of the following quality.

* Aggregates shall be hard, clean and free of all organic material. Coarse aggregates shall be comprised of clean, un weathered, hard, well graded material of between 9.5mm and 20mm in size where its required.
* Sand/gravel shall consist of grains with a maximum size of 9.5 mm. It shall be free of soil, clay, organic matter and other impurities and shall contain no more than 5% silt.
* Water used for mixing concrete and for curing shall be clean and free from injurious amounts of oil, acid, alkali, organic matters or any other deleterious substance. It shall be equal to potable water in physical and chemical properties.
* Cement shall be normal Portland cement. Bags shall be in perfect condition when delivered to the site. All broken bags or bags showing signs of dampness caking shall be immediately removed from the site. Reuse of spilled cement is not permitted.

Construction of the water tower, foundation, animal throughs and water point shall be in accordance with the engineering drawings.

15 Construction Materials

15.1 General

The contractor shall employ a fully competent and skilled supervisor for all concrete works, to ensure that required standards and ratios and good workmanship are maintained.

15.2 Cement

Cement shall comply with BS 12 for ordinary Portland cement and shall be free of lumps, the said quality cannot be found contractor shall mention available quality which shall be approved by client otherwise if found on site cement which fails to comply with the above quality and no mention was made prior to the inspection such cement will be removed from site.

15.3 Coarse Aggregates

Coarse aggregate shall be clean, hard, and durable crushed, comply with the requirements of BS 882. The aggregate shall be supplied in the normal sizes called for in the bid and shall be graded in accordance with BS 882 for each normal size.

15.4 Water for Concrete and Water for curing

Water used for concrete mix shall be from source that will be clean, fresh and free from organic matter in solution or suspension in such amount that may impair the strength or durability of the concrete.

15.5 Hand Mixing

Hand mixing maybe carried out subject to agreement with Field Teams, the mixing will then be done on hard surface. Mechanical concrete mixers are highly recommended for this process.

15.6 Placing / spreading of concrete.

The surface shall be clean, hard and sound and without any fore-standing water. The concrete shall be carefully worked round all obstructions and that all parts are completely full of compacted/vibrated concrete with no segregation. Concrete shall not be placed during rain which is sufficiently heavy or prolonged so that matter is worked from coarse concrete on the expose faces in the works.

16 Reporting

Upon completion of the borehole, the selected Contractor shall submit a report of the borehole construction work. The report shall include.

* SWAT/Borehole location details including GPS data in decimal format;
* Daily journal record, capturing the activities performed each day from the day of mobilization, including downtime and failures and if applicable the drilling depth.
* Lithology log, capturing all the information pertaining to the appearance of water filtrations and aquifer, types of rock found and sampling details including geophysical testing analysis.
* Casing and screen manufacturer, size, positioning and installation depth
* Filter pack details: size and depth of installation in the annulus.
* Step drawdown test with details of the pump used, installation depth, date of test, and SWL with analysis and determination of the specific drawdown.
* Constant rate test with details of the pump used, testing conditions and an analysis providing an estimation of transmissivity.
* Disinfection procedure followed and concentrations used; Submersible pump installation details: parts used, quantity and depth of installation.
* Water quality analysis
* Variation orders capturing deviation from ToR and BoQ signed by the Contractor and the DRC Supervisor.

The Contractor shall report the above information in a report signed by the director of state water cooperation.

No payment will be made prior to reception of all the documents described above.

17 Health and Safety

The Contractor’s Team Leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to providing his crew with safety helmets, hard toed boots (safety boots) or gumboots, heavy duty gloves, protective glasses and ensuring that all tools and equipment are in a safe condition and ensuring that his employees adopt safe working methods. No military-looking clothing will be accepted at any time.

Under this contract, the Contractor’s Team Leader has the obligation and responsibility to safeguard the safety and security of its personnel, the drilling crew’s equipment and other property, DRC-furnished equipment and supplies and personnel’s personal effects and other property. The Contractor’s team leader shall develop a security plan in consultation with DRC, including detailed procedures to cover evacuation, personnel, equipment, safeguarding of DRC-furnished equipment and supplies, unlawful interference and prevention of sabotage.

Care must be taken in the handling and storage of all drilling fluids, oils, greases and fuel on site, to avoid any environmental degradation. The Contractor shall dispose of any toxic materials, drilling fluid and other additives, cuttings and discharged water in a manner approved by the WASH Team Leader/WASH Program Manager so as not to create damage to public and private property.

The Contractor is to ensure that all materials, solid or liquid, are stored in a manner so as not to damage or contaminate any surface by spillage. All drilling equipment will be suitably leak free regarding oils or fuel. Care must be taken when re fueling on site.

18 Requirements of the Contractor for the tender

1. Experience

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory contract completion certificates) of at least 10-20 boreholes drilled in South Sudan with other NGOs or government amounting to a total value of 100,000 USD during the last 5 years. In addition, the Contractor shall provide satisfactory contract completion for at least 5 water yard construction in Sudan over the past 3 years.

1. Time for completion

The organization should complete the activity no further than 2 months after the signature of the contractual agreement. For the tender process, the Contractor should submit a work schedule (project Gantt chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 1 month will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document.

1. Legal documents from the government of South Sudan

The Contractor must present a copy of the valid drilling certificate; a copy of the company’s registry in the South Sudan’s Ministry of Legal Affairs and a copy of the trading license.

1. Budget

The companies participating in this tender should present the BoQ in Annex fully completed with the unit prices for each activity. The full amount quoted should cover all expenses for the completion of the activities under the contract, as well any indirect cost and/or administrative costs that the Contractor must incur. The Contractor shall be responsible for the welfare (accommodation and food) of the crew.

19 Defect liability period

The construction works will be guaranteed for a period of 1 year after completion. In an event that there are defects found on the borehole within the 1-year period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount as stipulated on the contract document.