

**TOLULOPE TOLUSE EMMANUEL.A**

**15/ENG07/044**

**SUBMITTED TO THE**

**CIVIL ENGINEERING PROGRAMME**

**DEPAERTMENT OF CIVIL ENGINEERING**

**COLLEGE OF ENGINEERING**

**AFE BABALOLA UNIVERSITY, ADO-EKITI, NIGERIA**

**IN PARTIAL FULFILMENT OF THE REQUIRMENT FOR THE**

**AWARD OF THE BACHELOR OF ENGINEERING [B.ENG]**

**DEGREE IN PETROLEUM ENGINEERING**

QUESTION 1

Prepare Bill of Engineering Measurement and Evaluation (BEME) FOR A TYPICAL Engineering Contract in your area of speciality.

solution

A contract for a borehole drilling.

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|  **BILL OF QUANTITIES FOR BOREHOLE DRILLING** |
| ***Client Name:***  | Mr. Eric Otieno | ***Date:*** | 1st September 2015 |
| ***B/Hole Contract:*** | Obambo - Kisumu | ***File Ref:*** | SPR 4756/15 |
| **Item** | **Description** | **Qty** | **Unit** | **Rate K.Shs.** | **Total K.Shs.** |
| 1 | Allow for the cost of transporting all equipment, and |
| personnel to site and demobilisation at completion of  |
| contract | - | Sum | 80,000.00 | 80,000.00 |
| 2 | Setting up and dismantling of the rig at the drilling site. | - | Sum | 30,000.00 | 30,000.00 |
| 3 | Drilling 8" diameter borehole from 0-100m depth | 100 | m | 2,400.00 | 240,000.00 |
| 3.1 | Drilling 8" diameter borehole from 100-110m depth | 10 | m | 2,500.00 | 25,000.00 |
| 3.2 | Drilling 8" diameter borehole above 110m depth |
| if necessary. | m | 3,000.00 | Rate Only |
| 4 | Water for drilling and camp use, maintenance of storage |
| tanks, water injection systems and useage of  |
| drilling foam | - | Sum | 30,000.00 | 30,000.00 |
| 5 | Supply and Install 152mm dia plain steel casings | 74 | m | 2,700.00 | 199,800.00 |
| 6 | Supply and Install 152mm dia plasma cut steel casings | 36 | m | 2,800.00 | 100,800.00 |
| 7 | Supply and Install gravel pack in the borehole | 2 | Ton | 10,000.00 | 20,000.00 |
| 8 | Allow for borehole development work (surging by air |
| of completed well until the water is clean (Approx. 2 hrs) | 2 | Hr | 10,000.00 | 20,000.00 |
| 9 | Allow to the cost of:- |
| (a) Reaming and boring. | - | M | 3,000.00 | Rate Only |
| (b) Insert, remove temporary casing etc. | - | Hr | 3,200.00 | Rate Only |
| (c) Insert 9" of temporary casing permanently. | - | M | 4,500.00 | Rate Only |
| (d) Setting time. | - | Ls | 10,000.00 | Rate Only |
| (e) Bentonite seal. | - | Ls | 8,000.00 | Rate Only |
| 10 | Pump testing completed well. Time taken to install |
| and remove pump, will be charged at same hourly rate | 24 | Hr | 2,500.00 | 60,000.00 |
| 11 | Provide all materials and construct concrete |
| top slab with well cap  | - | Sum | 10,000.00 | 10,000.00 |
| 12 | Standby charges for reasons beyond the Contractor's |
| control excluding force majeure conditions | - | Hr | 5,000.00 | Rate Only |
| 13 | Borehole Completion Data and Water Chemical |
| Analysis Report | - | Sum | 10,000.00 | 10,000.00 |
| 14 | Supply and installation of one submersible pump capable |
| of pumping 3m3/hr at a head of 90m including control |
| panel, electrodes, electrode cable, underground cables |
| float switch and various installation accessories | - | Sum | 600,000.00 | Rate Only  |
| **Sub Total** | **825,600.00**  |
| **Less Special Discount as the rig is in the area** | **30,000.00** |
| **795,600.00**  |
| **Add 16% VAT** | **127,296.00**  |
| **Estimated Total Contract Sum** | **922,896.00** |

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| TERMS AND CONDITIONS OF CONTRACT  |
| Drilling permit to be obtained by yourselves from Water Resources Management Authority before commencement  |
| of any drilling works.  |
| You will ensure that the actual borehole site is accessible by our Rig and support truck before moblisation. |
| We do not warrant or guarantee in anyway the quantity, quality, or kind of water, which may be  |
| encountered on completion of the drilling works. |
| PAYMENT TERMS |
| 60% - Payable before mobilisation to site |
| 20% - Payable upon completion of drilling works |
| 10% - Payable upon completion of casings and gravel packing |
| Balance payable on the completion of the borehole after calculation of actual measured works. |
| This quotation is binding for 30 DAYS. |
| The Law of Contract Act as administered in the Law of Kenya Act shall be applicable, upon signing of Contract |
| Agreement which is intended to create legally binding obligations between the Contractor and the Client. |