THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF ENERGY

TANZANIA GEOTHERMAL DEVELOPMENT COMPANY LIMITED

TENDER DOCUMENT

FOR

TENDER NO. PA/131/2022-2023/HQ/W/03 FOR PROVISION OF DRILLING SERVICES FOR THREE (3) SLIM WELLS AT NGOZI GEOTHERMAL DRILLING PROGRAM IN MBEYA REGION

INTERNATIONAL COMPETITIVE TENDERING

JUNE, 2023

List of Abbreviations

AQRB	Architects and Quantity Surveyors Registration Board
AGC	Attorney General Chamber
BAFO	Best and Final Offer
BHA	Bottom Hole Assembly
BOP	Blow Out Preventer
Cap	Chapter
DARB	Dispute Avoidance and Resolution Board
ERB	Engineers Registration Board
ES	Environmental and Social
FY	Financial Year
GCC	General Conditions of Contract
ICT	International Competitive Tendering
IFT	Invitation for Tenders
ITT	Instruction to Tenderers
JV	Joint Venture
JVCA	Joint Venture, Consortium, or Association
NCC	National Construction Council
NCT	National Competitive Tendering
OE	Owner's (TGDC's) Engineer
PE	Procuring Entity
PPAA	Public Procurement Appeals Authority
PPRA	Public Procurement Regulatory Authority
SCC	Special Conditions of Contract
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
STD	Standard Tender Document
SOW	Slip on Weld
TDS	Tender Data Sheet
TANePS	Tanzania National e-Procurement System

PART 1 – TENDERING PROCEDURES

SECTION I: INVITATION FOR TENDERS

TANZANIA GEOTHERMAL DEVELOPMENT COMPANY LIMITED

TENDER NO. PA/131/2022-2023/HQ/W/03

FOR

PROVISION OF DRILLING SERVICES FOR THREE (3) SLIM WELLS AT NGOZI GEOTHERMAL DRILLING PROGRAM IN MBEYA REGION

Date: **21st June, 2023**

1. The **Tanzania Geothermal Development Company Limited (TGDC)** intends to use funds from the Government of Tanzania budget for the financial year 2018/2019 and grant from the **Geothermal Risk Mitigation Facility for Eastern Africa (GRMF)** towards the cost of **Ngozi Geothermal Drilling Program** and apply part of the proceeds of these funds and grant to cover eligible payments under the contract for **Provision of Drilling Services for Three (3) Slim Wells at Ngozi Geothermal Drilling Program in Mbeya Region.**

2. The **Tanzania Geothermal Development Company Limited (TGDC)** now invites tenders from contractors registered as **Specialist Civil Contractor** in **Class One** for **Provision of Drilling Services for Three (3) Slim Wells at Ngozi Geothermal Drilling Program in Mbeya Region.**

3. Tendering will be conducted through the **International Competitive Tendering** specified in the Public Procurement Regulations, Government Notice No.446 of 2013 as amended in 2016.

4. Interested eligible Tenderers may obtain further information from and inspect the tendering document through TANePS and TGDC's website. A complete set of Tendering Document(s) in **English** may be obtained or downloaded from **TANePS** at www.taneps.go.tz and TGDC's website at www.tgdc.go.tz.

5. Tenderers are required to pay the tender participation fees of **TZS. 100,000.00** or equivalent amount in freely convertible currency to participate in this tendering process. Payment should made to **Tanzania Geothermal Development Company Limited, CRDB Tower Branch, Account No. 0150390592700.** Tenderers will submit evidence of payment with their bids.

6. All Tenders must be accompanied by a **Tender security** in an acceptable form in the amount of **TZS 117,000,000.00** or **freely convertible currencies**.

7. All Tenders must be properly filled in, sealed in plain envelopes, clearly marked with Tender No and Tender Description and submitted to the address below at or before **10:30 AM** on **24th July, 2023.** Tenders will be opened at or before **11:30 AM on 24th July, 2023** in the presence of the tenderers or their representatives who choose to attend at **Tanzania Geothermal Development Company Limited (TGDC) Ursino Estate, Mwai Kibaki Road, House number 25, Plot number 13, Dar es Salaam, Tanzania in** TGDC Board Room.

8. Any request for clarification with regards to this tender shall be addressed to the undersigned. TGDC shall respond to clarifications received not less than before the deadline for submission.

9. Faxed, Emailed, late tenders, portion of tenders, tenders not received, tenders not opened and not read out during tender opening shall not be accepted for evaluation irrespective of the circumstances**.**

General Manager

Tanzania Geothermal Development Company Limited (TGDC) Ursino Estate, Mwai Kibaki Road, House number 25, Plot number 13, P.O. Box 14801, Dar es Salaam, Tanzania
Tel: +255 734 303 838
Emails: gm.tgdc@tanesco.co.tz, info.tgdc@tanesco.co.tz and secretary.tgdctenderboard@tanesco.co.tz

SECTION II: INSTRUCTIONS TO TENDERERS (ITT)

Instruction to Tenderers to be used for this Tender shall be the Instruction to Tenderers (ITT) for the Standard Tender Document for Procurement of Medium and Large Works under International and National Competitive Methods prepared by the Public Procurement Regulatory Authority available on PPRA's Website www.ppra.go.tz.

SECTION III: TENDER DATA SHEET (TDS)

The following specific data for the works to be procured shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict between ITT and Tender Data Sheet (TDS), the provisions of TDS shall prevail over those in ITT.

TDS No	Required Information/Data	ITT Clause	Information/Data to be filled by the PE
			A. Introduction
1.	Name of the PE	1.1 & 1.2	The PE is: **Tanzania Geothermal Development Company Limited (TGDC)**
2.	Name of the project	1.2 & 2.1	Name of Project is: **Provision of Drilling Services for Three (3) Slim Wells at Ngozi Geothermal Drilling Program in Mbeya Region.**
3.	Expected date of completion	1.2	The expected completion date of the works is: **206 days from commencement.**
4.	Financial year	2.1	Financial Year **2018/2019.**
5.	Financing Institution	2.1	Name of financing institution is: **Government of the United Republic of Tanzania and the Geothermal Risk Mitigation Facility (GRMF).**
6.	The loan /credit number	2.1	The loan/ credit number is: **Not Applicable**.
7.	Members of JVCA	3.1	Maximum number of members in the **JVCA** shall be: **Not limited.**
8.	Eligibility of Tenderers	3.5	Only Tenderers registered as **Specialist Civil Contractors** in **Class One** with the Contractors Registration Board of Tanzania are eligible in the case of local contractors. Prior to submission of bids Foreign Contractors are required to consult the **Contractors Registration Board in Tanzania** at www.crb.go.tz and Confirm that they meet the Qualifications of the **Class One Specialist Civil Contractor.**
9.	Site Visit and Pre-tender Meeting	6.4	**6th July, 2023** at 09.00 Hrs. EAT **- Pre-Bid meeting** will be conducted online through Microsoft Teams Meeting. Meeting ID: 314 213 841 349 Passcode: fUiEs6 **NOTE:** You are emphasized to participate in Pre-bid meeting as the scope of the assignment will be discussed in details.
			B. Preparation of Tenders
10.	Language of the Tender	10.1	Language of Tender and all correspondence shall be **English.**

11.	Other required documents	11.1(h)	The Tenderer shall submit the following additional documents in its Tender; **Code of Conduct for Contractor's Personnel (ES)** The Tenderer shall submit its Code of Conduct that will apply to Contractor's Personnel (as defined in Sub-Clause 1 (ii) of the General Conditions of Contract), to ensure compliance with the Contractor's Environmental and Social (ES) obligations under the Contract (if required). The Tenderer shall use for this purpose the Code of Conduct form provided in Section IV. No substantial modifications shall be made to this form, except that the Bidder may introduce additional requirements, including as necessary to consider specific Contract issues/risks. **Management Strategies and Implementation Plans (MSIP) to manage the (ES) risks** *The Bidder shall submit* Management Strategies and Implementation Plans (MSIPs) to manage the following key Environmental and Social (ES) risks: ***[Note:** insert name of any specific plan and risk/s informed by the relevant environmental and social assessment]:* • *[e.g.* Sexual Exploitation, and Abuse (SEA) *prevention and response action plan]* • *[e.g. Traffic Management Plan to ensure safety of local communities from drilling traffic*];
12.	Information to be submitted by JVCA	12.5	Extra information to be submitted by the **JVCA** other than information required under Clause ITT12.5 **Not Applicable**
13.	Duties and taxes to be paid by contractor	15.3	**All statutory taxes, duties and other levies payable in Tanzania, which can be accessed from Tanzania Revenue Authority (TRA) at www.tra.go.tz.**
14.	Price Adjustment	15.5	The price quoted by the Tenderer **Shall not** subject to adjustment during the performance of the Contract.
15.	Fixed Budget Tender	15.6	Indicate if the tender is tendered under National, International and Restricted Competitive Tendering on Fixed Budget Method: **No.** If yes Indicate the available budget. **Not Applicable.**
16.	Currency of the Tender	16.1	The currency in which the prices shall be quoted shall be: **Both Tanzania Shillings and freely-convertible currencies**.
17.	Authority for Foreign Exchange Rate	16.2	The Authority for Obtaining Rate of Foreign Exchange shall be **Bank of Tanzania**
18.	Tender Validity Period	17.1	The Tender validity period shall be **120 days.**
19.	Form of Tender Security	18.1	The amount of Tender Security shall be **TZS 117,000,000.00** or **an equivalent amount in a freely-convertible currency**. Address for submission of the Original Tender Security is; **General Manager,**

			Tanzania Geothermal Development Company Limited (TGDC) **Ursino Estate, Mwai Kibaki Road, House Number 25, Plot Number 13,** **P.O. Box 14801,** **Dar es Salaam, Tanzania** **+255 734 303 838**
		18.3	The Tender Security shall be in the form of: **Unconditional Bank Guarantee.** **In case of a Foreign bidder Tender security should be in a form of Unconditional Bank Guarantee** (see Section V – Tendering Forms) **from a Bank confirmed by a reputable local Bank in Tanzania, the local Bank should be able to cash (forfeit) the security amount when instructed by Procuring Entity.**
20.	Alternative tenders	19.1	Alternative Tender are ***not allowed*** in this Tender.
21.	Alternative Completion Time	19.2	Alternative time for completion **N*ot applicable***
22.	Technical Alternatives	19.3	Offer of technical alternatives to the requirements of the Tendering Documents are **not allowed** in this Tender.
23.	Authorization to Sign on Behalf of the Tenderer	20.2	Authorization document(s) shall be [**duly notarized *Power of Attorney*** *in the format provided in Section V: Tendering Forms*
C. Submission of Tenders			
24.	Extension of Deadline for Submission of Tenders	22.3	The extension of the deadline for submission of a tender shall be made not later than **(7) days** before the expiry of the original deadline.
D. Opening and evaluation of tenders			
25.	Clarification of Tenders	27.2 & 27.3	Email address for tenderers to communicate with the PE: **gm.tgdc@tanesco.co.tz**, **info.tgdc@tanesco.co.tz and** **secretary.tgdctenderboard@tanesco.co.tz** **Ensure that the email is addressed to all the above emails.**
26.	Currency for Converting Tender Prices	30.2	The currency that shall be used for Tender evaluation and comparison purposes to convert all Tender prices expressed in various currencies is: **Tanzania Shillings.** The rates of exchange to be used by the Tenderer shall be those established by the **Bank of Tanzania** prevailing on 28 days before tender closing date.
27.	Adjustment of Tender Price for Allowance for Varying Times of Completion	31.2(d)	Tender price ***will not*** be adjusted by making an allowance for varying times of completion.
28.	Domestic Preference	32.1	Domestic preference as **per Regulation 33** and **Ninth Schedule** of the Public Procurement Regulations, 2013 as amended in 2016 is applicable.

29.	Sub-Contracting Arrangements	33.1	Indicate if Sub-contracting is allowed: **Yes.** ***Not more than 30% of works allowed for Subcontracting.*** The main criteria for subcontractors will be their capacity and extensive experience in the respective subcontracted activity. TGDC will approve all the subcontractors that the main contractor enters contract with.
30.	Post qualification performance	35.1	Post-qualification **shall** be performed.
		E. Award of contract	
31.	Percentage for Increase and Decrease for Quantities	39.1	Percentage for quantities increase or decrease **should not exceed fifteen percent (15%)** of the scope of work to be performed.
32.	Performance security	41.1	The Performance Security shall be in the form of: **Unconditional Bank Guarantee.** The Employer will authenticate the security from the issuing Bank. **In case of a Foreign bidder the Performance Security should be in a form of Unconditional Bank Guarantee** (Please see Section X: Contract Forms) **from a Bank confirmed by a reputable local Bank in Tanzania, the local Bank should be able to cash (forfeit) the security amount when instructed by Procuring Entity.** Amount of performance security: **Eight Percent (8%) of the contract price.**
33.	Environmental and Social Performance Security	41.1	The ES Performance Security will be in the form of a "demand guarantee" in the amount(s) of **2% of the Accepted Contract** Amount and in the same currency (ies) of the Accepted Contract Amount.
34.	Advance Payment	43.1	The Advance Payment shall be limited to: **Fifteen percen**t (**15%)** of the Contract Price upon submission of unconditional Advance Payment Bank Guarantee (Please see Section X: Contract Forms). The Employer will authenticate the security from the issuing Bank. In case of Foreign bidder Advance Payment security shall be confirmed by a reputable local Bank in Tanzania, the local Bank should be able to cash (forfeit) the security amount upon demand by the Procuring Entity.
35.	Appointment of Members of Dispute Avoidance and Resolution Board	44.1	**Will be proposed during Contract Negotiation.** The proposed Appointing Authority for the appointment of **Dispute Avoidance and Resolution Board** is **Tanzania Institute of Arbitration (TIArb).**
		F. Right to review	
36.	Address to submit Copy of complaints	48.1	The address to submit copies of complaints:

			The Chief Executive Officer, Public Procurement Regulatory Authority PSPF Dodoma Plaza, 9th Floor, Jakaya Kikwete Road, P.O. Box 2865, Dodoma, TANZANIA. Tel: +255 26 2963854 E-mail: ceo@ppra.go.tz Web: www.ppra.go.tz
37.	Address to Submit an Appeal to PPAA	50.2	The address for Appeal to PPAA: The Executive Secretary, Public Procurement Appeals Authority, Ministry of Finance and Planning, 1 Madaraka Street, P.O. Box 9310, 11468 Dar es Salaam. Telephone +255 22 2120451 Mobile: +255743505505 Fax + 255 022 2120460 Email: info@ppaa.go.tz or es@ppaa.go.tz Website www.ppaa.go.tz

SECTION IV: QUALIFICATION AND EVALUATION CRITERIA
(Without Prequalification)

This section contains all the criteria that the PE shall use to evaluate tenders and qualify Tenderers if the Tendering was not preceded by a prequalification exercise and post qualification is applied. In accordance with **ITT28** and **ITT** 31, no other methods, criteria and factors shall be used. The Tenderer shall provide all the information requested in the forms included in Section V (Tendering Forms).

Wherever a Tenderer is required to state a monetary amount, Tenderers should indicate the **TZS** equivalent using the rate of exchange determined as follows:

- -For drilling turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year (in which the amounts for that year is to be converted).
- -Value of single contract - Exchange rate prevailing on the date of the contract.

Exchange rates shall be taken from the publicly available source identified in the **ITT** 30.1. Any error in determining the exchange rates in the Tender may be corrected by the PE.

1. Margin of Preference: Applicable.

If a margin of preference shall apply under **ITT** 32.1, the procedure will be as follows as:

A margin of preference of up to 10% (ten percent) shall be granted to local contractors or **JVCA** of local and Foreign contractors, in accordance with, and subject to, the following provisions:

(a) Contractors applying for such preference shall provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whethera particular contractor or group of contractors qualifies for margin of preference. The tendering documents shall clearly indicate the preference and the method that will be followed in the evaluation and comparison of tenders to give effect to such preference.

(b) After tenders have been received and reviewed by the PE, responsive tenders shall be classified into the following groups:

(i) Group A: Tenders offered by domestic contractors;

(ii) Group B: Tenders offered by **JVCA** of domestic and foreign contractors meeting the criteria of **ITT** 32.4; or

(iii) Group C: Tenders offered by foreign contractors.

All evaluated tenders in each group shall, as a first evaluation step, be compared to determine the lowest tender, and the lowest evaluated tenders in each group shall be further compared with each other. If, as a result of this comparison, a tender from Group A or Group B is the lowest, it shall be selected for the award. If a tender from Group C is the lowest, as a second evaluation step, all tenders from Group C shall then be further compared with the lowest evaluated tender from Group A and B. For the purpose of this further comparison only, an amount of applicable margin of preference (from 6 to 10%) of the respective tender price corrected for arithmetical errors, including unconditional discounts and excluding provisional sums and the cost of day works, if any, shall be added to the evaluated price offered in each tender from Group C. If **the Tender** from Group A or B is the lowest, it shall be selected for award. If not, the lowest evaluated tender from Group C based on the first evaluation step shall be selected

2. Evaluation

In addition to the criteria listed in **ITT** 31.2 (a) – (f) the following criteria shall apply:

2.1 Adequacy of Technical Proposal

Evaluation of the Tenderer's Technical Proposal will include an assessment of the Tenderer's technical capacity to mobilize key equipment and personnel for the contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section VII (Works Requirements).

2.2 Multiple Contracts

Not Applicable

2.3 Alternative Completion Times

Not Applicable.

2.4 Technical Alternatives

Not Applicable.

2.5 Specialized Subcontractors

Only the specific experience of sub-contractors for specialized works permitted by the PE will be considered. The general experience and financial resources of the specialized sub-contractors shall not be added to those of the Tenderer for purposes of qualification of the Tenderer.

The specialized sub-contractors proposed shall be fully qualified for their work proposed, and meet the following criteria: **Proven capacity and extensive experience in the respective subcontracted activity.**

3. Qualification

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
1. Eligibility							
1.1	**Nationality**	Nationality in accordance with **ITT** 3.1	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and 1.2, with attachments
1.2	**Conflict of Interest**	No conflicts of interest in accordance with **ITT** 3.7	Must meet requirement	Must meet requirement	Must meet requirement	N/A	**Form of Tender**
1.3	**Not declared Ineligible**	Not having been declared ineligible as described in ITT3.8	Must meet requirement	Must meet requirement	Must meet requirement	N/A	**Form of Tender**
1.4	**Government Owned Entity**	Meets conditions of **ITT** 3.9	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and 1.2, with attachments
1.5	**Anti-Bribery Policy**	Submission of anti-bribery policy/code of conduct and Compliance Programme	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form-INTEG
2. Historical Contract Non-Performance							
2.1	**History of Non-Performing Contracts**	Non-performance of a contract[1] did not occur as a result of contractor default since **1st January, 2017.**	Must meet requirement[12]	Must meet requirements	Must meet requirement[2]	N/A	Form CON-2
2.2	**Debarment based on Execution of Tender Securing Declaration by the Authority**	Not under debarment based on execution of a Tender Securing Declaration pursuant to **ITT 3.8**	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Tender Submission Form

[1]Non performance, as decided by the PE, shall include all contracts where (a) non performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non performance shall not include contracts where PEs decision was overruled by the dispute resolution mechanism. Non performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Tenderer have been exhausted.

[2] This requirement also applies to contracts executed by the Tenderer as **JVCA** member.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
2.3	**Pending Litigation**	Tenderer's financial position and prospective long-term profitability sound according to criteria established in 3.1 below and assuming that all pending litigation will be resolved against the Tenderer	Must meet requirement	N/A	Must meet requirement	N/A	Form CON – 2
2.4	**Litigation History**	No consistent history of court/arbitral award decisions against the Tenderer[3] since **1st January, 2017.**	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Form CON – 2
2.5	**Compliance with Statutory Requirements**	No consistent history by the Tenderer[4] of failure to pay taxes and social security Contributions, and no failure to comply with environmental and health and safety requirements since **1st January, 2017.**	Must meet requirement	N/A	Must meet requirement	N/A	Form CON – 2

[3]The Tenderer shall provide accurate information on the letter of Tender about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last five years. A consistent history of court/arbitral awards against the Tenderer or any member of a joint venture may result in disqualifying the Tenderer.

[4] The Tenderer shall provide accurate information about failure to meet tax and social security Contributions, and no failure to comply with environmental and health and safety requirements over the specified period. A consistent history of failure to meet these statutory obligations may result in disqualifying the Tenderer.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
3. Financial Situation and Performance							
3.1	**Financial Capabilities**	(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the drilling cash flow requirements estimated as **TZS 3,353,933,500.00** for the subject contract(s) net of the Tenderers other commitments (ii) The Tenderers shall also demonstrate, to the satisfaction of the PE, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments. (iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the PE, for **the last three (3) years** shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.	Must meet requirement Must meet requirement	Must meet Requirement Must meet requirement	N/A N/A Must meet	N/A N/A	Form FIN – 3.1, with attachments

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
			Must meet requirement	N/A	requirement	N/A	
3.2	**Average Annual Drilling Turnover**	Minimum average annual drilling **turnover of TZS 10,061,800,300.00** calculated as total certified payments received for contracts in progress and/or completed within the last **Ten (10) years**, divided by **Ten (10) years**.	Must meet requirement	Must meet requirement	Must meet _____%, _____of the requirement	Must meet _____%, _____of the requirement	Form FIN – 3.2
3.3	**Current Commitments**	The Service Provider shall also demonstrate that it has adequate sources of finance to meet the cash flow requirements on contracts currently in progress and for future contract commitments.	Must Meet Requirement	Must Meet the requirement	N/A	N/A	Form FIN-3

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
4. Experience							
4.1 (a)	**General Drilling Experience**	Experience under drilling contracts in the role of prime contractor, **JVCA** member, sub-contractor, or management contractor for at least the last **5 years**, starting **1st January, 2017.**	Must meet requirement	N/A	Must meet requirement	N/A	Form EXP – 4.1
4.2 (a)	**Specific Drilling & Contract Management Experience**	(i) A minimum number of similar[5]contracts specified below that have been satisfactorily and substantially[6] completed as a prime contractor, **JVCA** member[7], management contractor or sub-contractor[7] between **1st January, 2017** and application submission deadline: (i) three ***(3)* contracts**, each of minimum value **TZS 5,000,000,000.00.**	Must meet requirement	Must meet requirement[8]	N/A	N/A	Form EXP 4.2(a)

[5]The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in Section VIII, Work's Requirements. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.

[6] Substantial completion shall be based on 80% or more works completed under the contract.

[7] For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share, by value, shall be considered to meet this requirement.

[8] In the case of **JVCA**, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the **JVCA** meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

Eligibility and Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		*(ii) For the following specialized works, the PE permits specialized sub-contractors as per **ITT** 33.3"* • Cementing • Fishing services • Aerated drilling	*"Must meet requirement for one contract (Requirement can be met through a Specialized Sub-contractor)"*	*Must meet requirement*	*N/A*	*"Must meet requirement (Requirement can be met through a Specialized Sub-contractor)"*	
4.2 (b)	**Experience in Key Activities**	For the above and any other contracts completed and under implementation as prime contractor, joint venture member, management contractor or sub-contractor[9] on or after the first day of the calendar year during the period stipulated in 4.2 (a) above, a minimum drilling experience in the following key activities successfully completed[10]: **. Drilling services**	Must meet requirements	Must meet requirements	N/A	Must meet the following requirements for the key activities listed below[16] *[list key activities and the corresponding minimum requirements]*	Form EXP – 4.2 (b)
4.2 (c)	**Specific Experience in managing ES aspects**	For contracts [substantially completed and under implementation] as prime contractor, joint venture	Must meet requirements	Must meet requirements	Must meet the following requirements: [*list key requirements to*	Must meet the following requirements: *[list key requirements to*	Form EXP – 4.2 (c)

[9]For contracts under which the Tenderer participated as a joint venture member or sub-contractor, only the Tenderer's share shall be counted to meet this requirement.

[10]Volume, number or rate of production of any key activity can be demonstrated in one or more contracts combined if executed during same time period. The rate of production shall be the annual production rate for the key drilling activity (or activities).

Eligibility and Qualification Criteria				Compliance Requirements			Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
		member, or Subcontractor between **1st January 2017** and Application submission deadline, experience in managing ES risks and impacts in the following aspects: **Drilling activities, Mud logging and well logging, Rig transfer between sites and rig demobilization.**			*be met by each member otherwise state: "N/A"]*	*be met by one member otherwise state: "N/A"]*	

5 Contractor's Key Personnel

The Tenderer must demonstrate that it will have suitably qualified Contractor's Representative and suitably qualified (and in adequate numbers) Key Personnel, for the key positions that meet the following requirements:

No.	Position	Qualification
1	Drilling supervisor	As per the issued specifications
2	Mechanic	As per the issued specifications
3	Mud logging expert	As per the issued specifications
4	Well logging expert	As per the issued specifications
5	Driller	As per the issued specifications
6	Assistant driller	As per the issued specifications
7	Roughneck	As per the issued specifications
8	Cementing Specialist	As per the issued specifications
9	Safety Officer	As per the issued specifications

The Tenderer shall provide details of the proposed personnel and their experience records using Forms PER-1 and PER-2 included in Section IV, Tendering Forms.

6. Equipment

The Tenderer must demonstrate that it will have access to the key equipment listed hereafter:
Not Applicable.

No.	Equipment Type and Characteristics	Minimum Number required

The Tenderer shall provide further details of proposed items of equipment using Form EQU in Section V, Tendering Forms.

SECTION V: TENDERING FORMS

Below is a checklist of forms/documents required to be submitted by the Tenderer. Each Tenderer must ensure that all forms/documents are properly prepared and submitted with his Tender. Failure to fill in and submit, or improper filling of the Forms/documents may result in the rejection of the Tender.

Ser. No.	Form Name	Description	Check if Included in the Submission	
			Yes	No
	Tender Forms			
1.		Form of Tender		
2.		Bill of Quantities		
3.		Standard Power of Attorney		
4.		Tender –Security Bank Guarantee		
5.	Form INTEG	Anti-Bribery Pledge		
	Technical S**ubmission**			
6.		Site Organization		
7.		Method Statement		
8.		Mobilization Schedule		
9.		Drilling Schedule		
10.		ES Management Strategies and Implementation Plans		
	Personnel			
11.	Form PER-1	Contractor's Representative and Key Personnel Schedule		
12.	Form PER-2	Resume and Declaration Contractor's Representative and Key Personnel		
	Tenderers Qualification without prequalification			
13.	Form ELI -1.1	Tenderer Information Form		
14.	Form ELI -1.2	Tenderer's JVCA Information Form		
15.	Form CON – 2	Historical Contract Non-Performance,		

Ser. No.	Form Name	Description	Check if Included in the Submission	
			Yes	No
		Pending Litigation		
16.	Form CON – 3	Environmental and Social (ES) Performance Declaration		
17.	Form FIN – 3.1	Financial Situation and Performance		
18.	Form FIN – 3.2	Average Annual Drilling Turnover		
19.	Form FIN – 3.3	Financial Resources		
20.	Form FIN – 3.4	Current Contract Commitments / Works in Progress		
21.	Form EXP- 4.1	General Drilling Experience		
22.	Form EXP-4.2(a)	Specific Drilling and Contract Management Experience		
23.	Form EXP-4.2(b)	Drilling Experience in Key Activities		
24.	Form EXP - 4.2 c)	Specific Experience in Managing ES aspects		

1. Form of Tender

[date]

To: *[name and address of Employer*]

We *[insert name of tenderer],* offer to execute the [*name and identification number of contracts]* in accordance with the Conditions of Contract accompanying this Tender for the Contract Price of *[amount in numbers], [amount in words] [name of currency].*

The Contract shall be paid in the following currencies:

Currency	**Percentage payable in currency**	**Rate of exchange: one foreign currency equals [*insert local]***	**Inputs for which foreign currency is required**
(a)			
(b)			

The advance payment required is:-

Amount	**Currency**
(a)	
(b)	

We declare that our tendering price did not involve agreements with other tenderers for the purpose of tender suppression.

The discounts offered and the methodology for their application are:

(i) The discounts offered are: ***[Specify in detail each discount offered.]***

(ii) The exact method of calculations to determine the net price after application of discounts is shown below*: [**Specify in detail the method that shall be used to apply the discounts**];*

We accept the appointment of *[name proposed in Tender Data Sheet]* as the Sole Member of Dispute Avoidance and Resolution Board[11].

or

We do not accept the appointment of *[name proposed in Tender Data Sheet]* as the Sole Member of Dispute Avoidance and Resolution Board, and we propose instead that *[name]* be appointed as Sole Member of Dispute Avoidance and Resolution Board, whose résumé is attached.

[11] This option to be used if in the TDS a sole member of DARB is applicable

We hereby confirm [*insert the name of the Appointing Authority*], to be the Appointing Authority, to appoint the Sole Member of Dispute Avoidance and Resolution Board in case of any arisen disputes in accordance with ITT 43.1

OR

We hereby propose the following three persons, whose curriculum vitae are attached, as potential DARB members[12]:

Name	Address
1. …….....	
2. ……..	
3. ……	

We are not participating, as tenderers, in more than one Tender in this tendering process other than alternative tenders in accordance with the tendering documents.

We declare that, as tenderer(s) we do not have conflict of interest with reference to ITT 3.7 [Eligibility of Tenderers]

With reference to ITT 3.11 [Eligibility of Tenderers], it is our intention to subcontract approximately *[insert the percent]* percentage of the Tender /Contract Price, details of which are provided herein.

Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the contract has not been declared ineligible by the Government of the United Republic of Tanzania under Tanzania's laws or official regulations or by an act of compliance with a decision of the United Nations Security Council.

The following commissions or gratuities of fees have been paid or are to be paid by us to agents relating to this tender, and to contract execution if we are awarded the contract: -

Name and address of agent or recipient	Amount and currency	Purpose of commission or gratuity

(if none has been paid or is to be paid, state “none”)

We understand that you are not bound to accept the lowest or any tender you receive.

We hereby confirm that this tender complies with the tender validity and Tender Security required by the tendering documents and specified in the Tender Data Sheet.

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _____

_____

[12]To be used when three members DARB is applicable.

Appendix to Tender

2. Schedule of Cost Indexation

*[**Note to PE:** It is recommended that the PE is advised by a professional with experience in drilling costs and the inflationary effect on drilling costs when preparing the contents of the Schedule of Cost Indexation. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved]*

[The formulae for price adjustment shall be of the following general type:]

$$Pn = a + b\frac{Ln}{Lo} + c\frac{En}{Eo} + d\frac{Mn}{Mo} + \ldots.$$

where:

"Pn" is the adjustment multiplier to be applied to the estimated contract value in the relevant currency of the work carried out in period "n", this period being a month unless otherwise stated in the **SCC**;

"a" is a fixed coefficient, stated in the relevant table of adjustment data, representing the non-adjustable portion in contractual payments;

"b", "c", "d", ... are coefficients representing the estimated proportion of each cost element related to the execution of the Works as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials;

"Ln", "En", "Mn", ... are the current cost indices or reference prices for period "n", expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

"Lo", "Eo", "Mo", are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The cost indices or reference prices stated in the Table of Adjustment Data shall be used. If their source is in doubt, it shall be determined by the Project Manager. For this purpose, reference shall be made to the values of the indices at stated dates (quoted in the fourth and fifth columns respectively of the table).

If the currency in which the Contract price is expressed is different from the currency of the country of origin of the indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z_0 / Z_1, where,

Z_0 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Base date, and

Z_1 = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Date of Adjustment.

Schedule of Adjustment Data

[In Tables A, B, and C, below, the Tenderer shall (a) indicate its amount of local currency payment, (b) indicate its proposed source and base values of indices for the different foreign currency elements of cost, (c) derive its proposed weightings for local and foreign currency payment, and (d) list the exchange rates used in the currency conversion. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]

Table A. Local Currency

Table A. Local Currency

Index code	Index description	Source of index	Base value and date	Tenderer's related currency amount	Range of weighting Proposed by the Procuring Entity	Tenderer's proposed weighting
	Non-adjustable	—	—	—	**a: _____*** **b: ------ to ------*** **c: ------- to ------*** **d: ------- to -----*** **e: ------- to ------*** **etc.**	**a: _____*** **b: _____** **c: _____** **d: _____** **e: _____** **etc.**
				Total		**1.00**

[* To be entered by the PE. Whereas "a" should a fixed percentage, b, c, d and e should specify a range of values and the Tenderer will be required to specify a value within the range such that the total weighting = 1.00]

Table B. Foreign Currency (FC)

State type: ..... [If the Tenderer is allowed to receive payment in foreign currencies this table shall be used. If Tenderer wishes to quote in more than one foreign currency (up to three currencies permitted) then this table should be repeated for each foreign currency.]

Index code	Index description	Source of index	Base value and date	Tenderer's related source currency in type/amount	Equivalent in Foreign Currency 1	Range of weighting Proposed by the Procuring Entity	Tenderer's proposed weighting
	Non-adjustable	—	—	—		**a: _____*** **b: ------ to ------*** **c: ------- to ------*** **d: ------- to -----*** **e: ------- to ------*** **etc.**	**a: _____*** **b: _____** **c: _____** **d: _____** **e: _____** **etc.**

[* To be entered by the PE. Whereas "a" should a fixed percentage, b, c, d and e should specify a range of values and the Tenderer will be required to specify a value within the range such that the total weighting = 1.00]

Table C. Summary of Payment Currencies

Table: Alternative A
For …….[insert name of Section of the Works]

Name of payment currency	A Amount of currency	B Rate of exchange (local currency per unit of foreign)	C Local currency equivalent C = A x B	D Percentage of Total Tender Price (TTP) $\frac{100xC}{TTP}$
Local currency _____		**1.00**		
Foreign currency #1 _____				
Foreign currency #2 _____				
Foreign currency # _____				
Total Tender Price				**100.00**
Provisional sums expressed in local currency	[To be entered by the PE]		[To be entered by the PE]	
TOTAL TENDER PRICE (including provisional sum)				

Table: Alternative B

To be used only with Alternative B Prices directly quoted in the currencies of payment. *(Clause **ITT** 16.1)*

Summary of currencies of **the Tender** for _____*[insert name of Section of the Works]*

Name of currency	*Amounts payable*
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[To be entered by the PE]

4. Special Power of Attorney[13]

KNOW ALL MEN BY THESE PRESENTS THAT I the undersigned [*insert name of the Donor*] being [insert designation] of [*insert name of the company*] of [*insert company address*] having its registered office at [*insert physical address of company*];

WHEREAS in course of business it is necessary to bid for tenders and enter into contracts;

NOW THEREFORE KNOW ALL MEN THAT I [*insert name of the Donor*] by virtue of authority conferred to me by the Board Resolution No [*insert Board Resolution Number*] of [*insert day*] day of [*insert Board Resolution month and year*],do hereby ordain, nominate, authorize, empower and appoint [*insert name of Donee*] of [*insert address of the Donee*] to be our true lawful Attorney and Agent with full power and authority for us and in our names and for our accounts and benefits, to do any, or all of the following acts, in the execution of tender No. *[insert tender number*] that is to say;

> To act on my behalf or for the company and do any other thing or things incidental for [*insert tender Number*] of *[insert description of procurement]* for the [*insert name of the procuring entity*];

AND provided always that this Power of Attorney shall not revoke or in any manner affect any future Power of Attorney given to any other person or persons for such other power or powers shall remain and be of the same force and affect as if this deed has not been executed.

AND we hereby undertake to ratify everything, which our Attorney or any substitute or substitutes or agent or agents duly appointed by him under this power on his behalf herein before contained shall do or purport to do in virtue of this Power of Attorney.

SEALED with the common seal of the said *[[insert name of the company**]*** and delivered in the presence of us this *[insert date]* day of *[insert month] [insert year].*

IN WITNESS whereof we have signed this deed on this *[insert date]* day of *[insert month] [insert year]* at *[insert place]* for and on behalf of *[insert name of the company or Donor]*
……

[13] *Note: Power of Attorney for a Foreign Firm may be presented in any other acceptable format*

SIGNED AND DELIVERED by the said [*insert name of Donor*] Identified to me by***[insert name]***
The latter being known to me personally

this *[insert date, month and year**]***

.....
DONOR

BEFORE ME:

Name:……..

Address:……..

Qualification:……

Signature:.....
COMMISSIONER FOR OATHS

Acknowledgement

I [*insert name of Donee*] doth hereby acknowledge and accept to be Attorney of the said [*insert name of the company/donor*] under the Terms and Conditions contained in this Power of Attorney and I promise to perform and discharge my duties as the lawfully appointed Attorney faithfully and honestly.

SIGNED AND DELIVERED by the said [*insert name of Donee*] Identified to me by ***[insert name]***
The latter being known to me personally this *[insert date, month and year*],

.....
DONEE

BEFORE ME

Name:……

Address:……

Qualification:……..

Signature:.....

COMMISSIONER FOR OATHS

7. Tender Security (Bank Guarantee)

*[If required, the **Bank/Tenderer** shall fill in this Bank Guarantee form in accordance with the instructions indicated in brackets.]*

[insert bank's name, and address of issuing branch or office]

Beneficiary: *[insert name and address of Procuring Entity]* **Date:** *[insert date]*

TENDER GUARANTEE No.:*[insert number]*

We have been informed that *[insert name of the Tenderer; if a joint venture, list complete legal names of partners]* (hereinafter called "the Tenderer") has submitted to you its Tender dated *[insert date]* (hereinafter called "the Tender") for the execution of *[insert name of Contract]* under Invitation for Tenders No. *[insert IFT number]* ("the IFT").

Furthermore, we understand that, according to your conditions, Tenders must be supported by a Tender Guarantee.

At the request of the Tenderer, we *[insert name of bank]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[insert amount in figures expressed in TZS or the equivalent amount in an international freely convertible currency]* (*[insert amount in words]*) upon receipt by us of your first demand in writing accompanied by a written statement stating that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

(a) has withdrawn its Tender during the period of Tender validity specified by the Tenderer in the Form of Bid; or

(b) does not accept the correction of errors in accordance with the Instructions to Tenderers (hereinafter "the ITT") of the IFT; or

(c) having been notified of the acceptance of its Tender by the Procuring Entity during the period of Tender validity, (i) fails or refuses to execute the Contract Form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This Guarantee shall expire: (a) if the Tenderer is the successful Tenderer, upon our receipt of copies of the Contract signed by the Tenderer and of the Performance Security issued to you by the Tenderer; or (b) if the Tenderer is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of your notification to the Tenderer that the Tenderer was unsuccessful, or (ii) twenty-eight days after the expiration of the Tenderer's Tender.

Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date.

_____

[signature(s) of authorized representative(s)]

8. Form of Tender Security (Tender Bond)

BOND NO. _____

BY THIS BOND _____ as Principal (hereinafter called "the Principal"), and _____,authorized to transact business in _____, as Surety (hereinafter called "the Surety"), are held and firmly bound unto _____ as Obligee (hereinafter called "the Purchaser") in the sum of _____ (_____), for the payment of which sum, well and truly to be made, we, the said Principal and Surety, bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

WHEREAS the Principal has submitted a written Tender to the Purchaser dated the ___ day of _____, 20__, for the drilling of _____ (hereinafter called the "Tender").

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal:

(a) withdraws its Tender prior to the Tender validity expiry date set forth in the Form of Tender, or any extended date provided by the Tenderer; or

(b) refuses to accept the correction of its Tender by the Purchaser pursuant to **ITT**

(c) having been notified of the acceptance of its Tender by the Purchaser prior to the expiry date of the Tender validity or any extension thereto provided by the Tenderer; (i) fails or refuses to execute the Contract Form, if required; or (ii) fails or refuses to furnish the Performance Security in accordance with the Instructions to Tenderers;

then the Surety undertakes to immediately pay to the Purchaser up to the above amount upon receipt of the Purchaser's first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

The Surety hereby agrees that its obligation will remain in full force and effect up to and including the date 28 days after the date of expiration of the Tender validity set forth in the Form of Tender or any extension thereto provided by the Tenderer.

IN TESTIMONY WHEREOF, the Principal and the Surety have caused these presents to be executed in their respective names this ____ day of _____ 20__.

Principal: _____	Surety: _____ Corporate Seal (where appropriate)
_____ *(Signature)*	_____ *(Signature)*
(Printed name and title)	*(Printed name and title)*

9. Form INTEG- UNDERTAKING BY TENDERER ON ANTI – BRIBERY POLICY / CODE OF CONDUCT AND COMPLIANCE PROGRAMME

Each Tenderer must submit a statement, as part of **the Tender** documents, in either of the two given formats which must be signed personally by the Chief Executive Officer or other appropriate senior corporate officer of **the Tender**ing company and, where relevant, of its subsidiary in the United Republic of Tanzania. If a tender is submitted by a subsidiary, a statement to this effect will also be required of the parent company, signed by its Chief Executive Officer or other appropriate senior corporate officer.

MEMORANDUM (Format 1)
(*Regulation 78(2) of the Public Procurement Regulations, 2013 - Government Notice No. 446 of 2013 as amended in 2016.)*

This company _____*[name of company]* places importance on competitive tendering taking place on a basis that is free, fair, competitive and not open to abuse. It is pleased to confirm that it will not offer or facilitate, directly or indirectly, any improper inducement or reward to any public officer their relations or business associates, in connection with its tender, or in the subsequent performance of the contract if it is successful.

This company has an Anti-Bribery Policy/Code of Conduct and a Compliance Program which includes all reasonable steps necessary to assure that the No-bribery commitment given in this statement will be complied with by its managers and employees, as well as by all third parties working with this company on the public sector projects, or contract including agents, consultants, consortium partners, sub- contractors and suppliers. **Copies of our Anti-Bribery Policy/Code of Conduct and Compliance Program are attached.** [14]

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _____

[14]Signing of this memorandum is not sufficient if it is not accompanied by the Anti-bribery Policy/Code of Conduct and Compliance programme of the Tenderer. For tenders submitted by the JVCA each member must submit its Anti-bribery Policy/Code of Conduct and Compliance programme.

MEMORANDUM (Format 2)

(*Regulation 78(2) of the Public Procurement Regulations, 2013 - Government Notice No. 446 of 2013 as amended in 2016.)*

This company _____*[name of company]* has issued, for the purposes of this tender, a Compliance Program[15] copy attached -which includes all reasonable steps necessary to assure that the No-bribery commitment given in this statement will be complied with by its managers and employees, as well as by all third parties working with this company on the public sector projects or contract including agents, consultants, consortium partners, subcontractors and suppliers.

Authorized Signature:_____

Name and Title of Signatory: _____

Name of Tenderer: _____

Address: _____

[15]Signing of this memorandum is not sufficient if it is not accompanied by the Anti-bribery Policy/Code of Conduct and Compliance programme of the Tenderer. For tenders submitted by the JVCA each member must submit its Anti-bribery Policy/Code of Conduct and Compliance programme.

Technical Submission

1. Site Organization
2. Method Statement
3. Mobilization Schedule
4. Drilling Schedule
5. Environmental and Social Management Strategies and Implementation Plans
6. Code of Conduct (ES)
7. Key Personnel Schedule
8. Others

Site Organization

The Tenderer shall include hereunder an organizational diagram indicating his proposed project organization, including Head Office management and possible sub-contractors.

The chart shall be sufficiently detailed to enable an assessment of the number of supervisory staff and foremen available on site to the extent that CVs requested under Personnel, such candidate shall be identifiable on the attached organization diagram.

Method Statement

The Tenderer is expected hereunder to detail clearly how he intends to execute the works and complete the entire work in accordance with the proposed programme

Mobilization Schedule

In accordance with the General Conditions of Contract Sub-Clause 4.1.6, the Contractor shall not carry out mobilization to Site unless the Project Manager gives consent that appropriate measures are in place to address environmental and social risks and impacts, which at a minimum shall include applying the Management Strategies and Implementation Plans (MSIPs) and Code of Conduct for Contractor's Personnel, submitted as part of the Tender and agreed as part of the Contract

Drilling Schedule

The drilling schedule shall include the following key milestones:

- *No-objection to the Contractor MSIPs, which collectively form the C-ESMP, in accordance with the General Conditions of Contract Sub-Clause 4.1.6.*
- *Constitution of the DARB*

ES Management Strategies and Implementation Plans

(ES-MSIP)

*The Tenderer shall submit comprehensive and concise Environmental and Social Management Strategies and Implementation Plans (ES-MSIP) as required by **ITT** 11.1 (g) of the Tender Data Sheet. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.*

In developing these strategies and plans, the Tenderer shall have regard to the ES provisions of the contract including those as may be more fully described in the Works Requirements described in Section VII.

Form EQU: Equipment

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section IV, **Qualification and Evaluation Criteria**. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment ☐ Owned ☐ Rented ☐ Leased ☐ Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

Personnel

Form PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	**Title of position:** Contractor's Representative	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
2.	**Title of position:** *[insert title]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
3.	**Title of position:** *[insert title]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

4.	**Title of position:** *[insert title]*	
	Name of candidate:	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
5.	**Title of position: [***insert title]* *[Where a Project SEA risks are assessed to be substantial or high, Key Personnel shall include an expert with relevant experience in addressing sexual exploitation, sexual abuse and sexual harassment cases]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]
6.	**Title of position:** *[insert title]*	
	Name of candidate	
	Duration of appointment:	[*insert the whole period (start and end dates) for which this position will be engaged*]
	Time commitment: for this position:	[*insert the number of days/week/months/ that has been scheduled for this position*]
	Expected time schedule for this position:	[*insert the expected time schedule for this position (e.g. attach high level Gantt chart*]

Form PER-2:
Resume and Declaration
Contractor's Representative and Key Personnel

Name of Tenderer

Position [*#1*]: [*title of position from Form PER-1*]		
Personnel information	**Name:**	**Date of birth:**
	Address:	**E-mail:**
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: *[language and levels of speaking, reading and writing skills]*	
Details		
	Address of PE:	
	Telephone:	**Contact (manager / personnel officer):**
	Fax:	
	Job title:	**Years with present PE:**

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
[main project details]	*[role and responsibilities on the project]*	*[time in role]*	*[describe the experience relevant to this position]*

Declaration

I, the undersigned *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

Commitment	**Details**
Commitment to duration of contract:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*
Time commitment:	*[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]*

I understand that any misrepresentation or omission in this Form may:

(a) be taken into consideration during Tender evaluation;

(b) result in my disqualification from participating in the Tender;

(c) result in my dismissal from the contract.

Name of Contractor's Representative or **Key Personnel: [*insert name*]**

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date: (day month year): _____

Tenderers Qualification following Prequalification

The Tenderer shall update the information given during the corresponding prequalification exercise to demonstrate that he continues to meet the criteria used at the time of prequalification regarding

(a) Eligibility

(b) Pending Litigation

(c) Environmental and Social Performance Declaration

(d) Financial Situation

For this purpose, the Tenderer shall use the relevant forms included in this Section.

Form ELI -1.1

Tenderer Information Form

Date: _____
Tender No. and title: _____
Page_____of _____pages

Tenderer's name
In case of Joint Venture (**JVCA**), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with **ITT**3.3. ☐ In case of **JVCA**, letter of intent to form **JVCA** or **JVCA** agreement, in accordance with **ITT**3.1. ☐ In case of Government-owned enterprise or institution, in accordance with **ITT**3.9 documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Tenderer is not dependent agency of the PE 2. Included are the organizational chart, a list of Board of Directors.

Form ELI -1.2

Tenderer's JVCA Information Form
(to be completed for each member of Tenderer's JVCA)

Date: _____
Tender No. and title: _____
Page _____ of _____ pages

Tenderer's **JVCA** name:
JVCA member's name:
JVCA member's country of registration:
JVCA member's year of constitution:
JVCA member's legal address in country of constitution:
JVCA member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with **ITT**3.3. ☐ In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with **ITT**3.9. 2. Included are the organizational chart, a list of Board of Directors.

Form CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History, and Conformance to Statutory Requirements

Tenderer's Name: _____
Date: _____
JVCA Member Name_____
Tender No. and title: _____
Page _____of _____pages

Non-Performed Contracts in accordance with Section IV-Qualifications and Evaluation Criteria			
☐ Contract non-performance did not occur since 1st January *[insert year]* specified in Section IV-Qualifications and Evaluation Criteria, Sub-Factor 2.1. ☐ Contract(s) not performed since 1st January *[insert year]* specified in Section IV-Qualifications and Evaluation Criteria, requirement 2.1			
Year	**Non-performed portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and TZS equivalent)**
		Contract Identification: Name of PE: Address of PE: Reason(s) for non-performance:	
Pending Litigation, in accordance with Section IV-Qualifications and Evaluation Criteria			
☐ No pending litigation in accordance with Section IV-Qualifications and Evaluation Criteria, Sub-Factor 2.3. ☐ Pending litigation in accordance with Section IV-Qualifications and Evaluation Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount
		Contract Identification: _____ Name of PE: _____ Address of PE: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	
☐ Proof of Payment of Taxes since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5 ☐Proof of Payment of Social Security Contributions since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5. ☐ No Consistent History of abuse of Employment Laws since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5.			
Payment of Taxes		*[Provide certified evidence of Tax Clearance for the previous Tax Period] Note: Should not be more than 15 months old.*	
Social Security Contributions		*[Provide a certified copy of Social Security Contributions for the specified Period]*	
History of Employment Related Cases		*1. Provide a list and outcome of Labour Cases decided in the last two years by the Commission of Mediation and Arbitration* *[Provide a list of pending Labour Cases with the Labour Commission of Mediation and Arbitration]*	

Form CON – 3

Environmental and Social (ES)
Performance Declaration

[The following table shall be filled in for the Tenderer, each member of a Joint Venture and each Specialized Subcontractors]

Tenderer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member's or Specialized Subcontractor's Name: *[insert full name]*
Tender No. and title: *[insert ICB number and title]*
Page *[insert page number]* of *[insert total number]* pages

Environmental and Social (ES) Performance Declaration in accordance with Section IV-Qualifications and Evaluation Criteria, and Requirements of the Prequalification document			
☐ **No suspension or termination of contract**: A PE has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental and Social (ES) performance since the date specified in Section IV-Qualifications and Evaluation Criteria, Sub-Factor 2.5. ☐ **Declaration of suspension or termination of contract**: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an PE(s) for reasons related to Environmental and Social (ES) performance since the date specified in Section IV-Qualifications and Evaluation Criteria, Sub-Factor 2.5. Details are described below:			
Year	**Suspended or terminated portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and TZS equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of PE: *[insert full name]* Address of PE: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s) e.g. gender-based violence; sexual exploitation or sexual abuse breaches]*	*[insert amount]*
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of PE: *[insert full name]*	*[insert amount]*

		Address of PE: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s)]*	
…	…	*[list all applicable contracts]*	…
Performance Security called by an PE(s) for reasons related to ES performance			
Year	Contract Identification		Total Contract Amount (current value, currency, exchange rate and **TZS** equivalent)
[insert year]	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of PE: *[insert full name]* Address of PE: *[insert street/city/country]* Reason(s) for calling of performance security: *[e.g. gender-based violence; sexual exploitation or sexual abuse breaches]*		*[insert amount]*

Form FIN – 3.1

Financial Situation and Performance

Tenderer's Name: _____
Date: _____
JVCA Member Name_____
Tender No. and title: _____
Page _____of _____pages

1. Financial data

Type of Financial information in (currency)	**Historic information for previous _____*years,*** **_____ (amount in currency, currency, exchange rate, TZS equivalent)**				
	Year 1	Year 2	Year 3	Year4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

2. Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (TZS equivalent)
1		
2		
3		

2. Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____years pursuant Section IV, Qualification and Evaluation Criteria, Sub-factor 3.2. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of **JVCA** member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[16] for the _____years required above; and complying with the requirements

[16] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

Form FIN - 3.2

Average Annual Drilling Turnover

Tenderer's Name: _____
Date: _____
JVCA Member Name_____
Tender No. and title: _____
Page _____of _____pages

	Annual turnover data (drilling only)		
Year	**Amount** **Currency**	**Exchange rate**	**TZS equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Drilling Turnover *			

* See Section IV, **Qualification and Evaluation Criteria**, Sub-Factor 3.2.

Tenderers Qualification without prequalification

To establish its qualifications to perform the contract in accordance with Section IV (**Qualification and Evaluation Criteria**) the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

Form ELI -1.1

Tenderer Information Form

Date: _____
Tender No. and title: _____
Page_____of _____pages

Tenderer's name
In case of Joint Venture (**JVCA**), name of each member:
Tenderer's actual or intended country of registration: *[indicate country of Constitution]*
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with **ITT**3.3. ☐ In case of **JVCA**, letter of intent to form **JVCA** or **JVCA** agreement, in accordance with **ITT**3.1. ☐ In case of Government-owned enterprise or institution, in accordance with **ITT**3.9 documents establishing: • Legal and financial autonomy • Operation under commercial law • Establishing that the Tenderer is not dependent agency of the PE 2. Included are the organizational chart, a list of Board of Directors.

Form ELI -1.2

Tenderer's JVCA Information Form
(to be completed for each member of Tenderer's JVCA)

Date: _____
Tender No. and title: _____
Page _____ of _____ pages

Tenderer's **JVCA** name:
JVCA member's name:
JVCA member's country of registration:
JVCA member's year of constitution:
JVCA member's legal address in country of constitution:
JVCA member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of ☐ Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with **ITT**3.3. ☐ In case of a Government-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and absence of dependent status, in accordance with **ITT**3.9. 2. Included are the organizational chart, a list of Board of Directors.

Form CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History, and Conformance to Statutory Requirements

Tenderer's Name: _____
Date: _____
JVCA Member's Name_____
Tender No. and title: _____
Page _____of _____pages

<table>
<tr><td colspan="4">Non-Performed Contracts in accordance with Section IV, Qualification and Evaluation Criteria</td></tr>
<tr><td colspan="4">☐ Contract non-performance did not occur since 1st January [insert year] specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.1.
☐ Contract(s) not performed since 1st January [insert year] specified in Section IV, Qualification and Evaluation Criteria, requirement 2.1</td></tr>
<tr><td>Year</td><td>Non-performed portion of contract</td><td>Contract Identification</td><td>Total Contract Amount (current value, currency, exchange rate and TZS equivalent)</td></tr>
<tr><td>[insert year]</td><td>[insert amount and percentage]</td><td>Contract Identification: [indicate complete contract name/ number, and any other identification]
Name of PE: [insert full name]
Address of PE: [insert street/city/country]
Reason(s) for non-performance: [indicate main reason(s)]</td><td>[insert amount]</td></tr>
<tr><td colspan="4">Pending Litigation, in accordance with Section IV, Qualification Criteria and Requirements</td></tr>
<tr><td colspan="4">☐ No pending litigation in accordance with Section IV, Qualification Criteria and Requirements, Sub-Factor 2.3.
☐ Pending litigation in accordance with Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.3 as indicated below.</td></tr>
</table>

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), TZS Equivalent (exchange rate)
		Contract Identification: _____ Name of Employer: _____ Address of Employer: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	

☐ No pending litigation in accordance with Section IV, **Qualification and Evaluation Criteria**, Sub-Factor 2.3.
☐ Pending litigation in accordance with Section IV, **Qualification and Evaluation Criteria**, Sub-Factor 2.3 as indicated below.

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), TZS Equivalent (exchange rate)
		Contract Identification: Name of Employer: Address of Employer: Matter in dispute: Party who initiated the dispute: Status of dispute:	

☐ Proof of Payment of Taxes since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5

☐Proof of Payment of Social Security Contributions since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5.

☐ No Consistent History of abuse of Employment Laws since 1st January *[insert year]* specified in Section IV, Qualification and Evaluation Criteria, Sub-Factor 2.5.

Payment of Taxes	*[Provide certified evidence of Tax Clearance for the previous Tax Period] Note: Should not be more than 15 months old.*
Social Security Contributions	*[Provide a certified copy of Social Security Contributions for the specified Period]*
History of Employment Related Cases	*2. Provide a list and outcome of Labour Cases decided in the last two years by the Commission of Mediation and Arbitration* *[Provide a list of pending Labour Cases with the Labour Commission of Mediation and Arbitration]*

Form CON – 3

Environmental and Social (ES)

Performance Declaration

[The following table shall be filled in for the Tenderer, each member of a Joint Venture and each Specialized Subcontractor]

Tenderer's Name: ***[insert full name]***
Date: ***[insert day, month, year]*** **Joint Venture Member's or Specialized Subcontractor's Name:** ***[insert full name]***
Tender No. and title: ***[insert ICB number and title]***
Page ***[insert page number]*** **of** ***[insert total number]*** **pages**

Environmental and Social (ES) Performance Declaration in accordance with Section IV, Qualification Criteria, and Requirements			
☐ **No suspension or termination of contract**: An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental and Social (ES) performance since the date specified in Section IV, Qualification Criteria, and Requirements, Sub-Factor 2.5. ☐ **Declaration of suspension or termination of contract**: The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental and Social (ES) performance since the date specified in Section IV, Qualification Criteria, and Requirements, Sub-Factor 2.5. Details are described below:			
Year	**Suspended or terminated portion of contract**	**Contract Identification**	**Total Contract Amount (current value, currency, exchange rate and TZS equivalent)**
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s)]*	*[insert amount]*
[insert year]	*[insert amount and percentage]*	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for suspension or termination: *[indicate main reason(s)]*	*[insert amount]*

…	…	*[list all applicable contracts]*	…
Performance Security called by an employer(s) for reasons related to ES performance			
Year	Contract Identification		Total Contract Amount (current value, currency, exchange rate and **TZS** equivalent)
[insert year]	Contract Identification: *[indicate complete contract name/ number, and any other identification]* Name of Employer: *[insert full name]* Address of Employer: *[insert street/city/country]* Reason(s) for calling of performance security: *[indicate main reason(s)]*		*[insert amount]*

Form FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____
Date: _____
JVCA Member's Name_____
Tender No. and title: _____
Page _____of _____pages

1. Financial data

Type of Financial information in (currency)	**Historic information for previous _____*years,* _____ (amount in currency, currency, exchange rate*, TZS equivalent)**				
	Year 1	Year 2	Year 3	Year4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to **ITT**30 for the exchange rate

2. Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount (TZS equivalent)
1		
2		
3		

2. Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____years pursuant Section IV, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

(a) reflect the financial situation of the Tenderer or in case of **JVCA** member, and not an affiliated entity (such as parent company or group member).

(b) be independently audited or certified in accordance with local legislation.

(c) be complete, including all notes to the financial statements.

(d) correspond to accounting periods already completed and audited.

☐ Attached are copies of financial statements[17] for the _____years required above; and complying with the requirements

[17] If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

Form FIN – 3.2:

Average Annual Drilling Turnover

Tenderer's Name: _____
Date: _____
JVCA Member's Name_____
Tender No. and title: _____
Page _____of _____pages

	Annual turnover data (Drilling only)		
Year	**Amount** **Currency**	**Exchange rate**	**TZS equivalent**
[indicate year]	*[insert amount and indicate currency]*		
Average Annual Drilling Turnover *			

* See Section IV, **Qualification and Evaluation Criteria**, Sub-Factor 3.2.

Form FIN – 3.3:

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total drilling cash flow demands of the subject contract or contracts as specified in Section IV (**Qualification and Evaluation Criteria**)

Financial Resources		
No.	**Source of financing**	**Amount (TZS equivalent)**
1		
2		
3		

Form FIN – 3.4:

Current Contract Commitments / Works in Progress

Tenderers and each member to a **JVCA** should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments					
No.	**Name of Contract**	**Employer's Contact Address, Tel, Email**	**Value of Outstanding Work [Current TZS Equivalent]**	**Estimated Completion Date**	**Average Monthly Invoicing Over Last Six Months [TZS/month)]**
1					
2					
3					
4					
5					

Form EXP - 4.1

General Drilling Experience

Tenderer's Name: _____
Date: _____
JVCA Member's Name_____
Tender No. and title: _____
Page _____of _____pages

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Employer: _____ Address: _____	

Form EXP - 4.2(a)

Specific Drilling and Contract Management Experience

Tenderer's Name: _____
Date: _____
JVCA Member's Name_____
Tender No. and title: _____
Page _____of _____pages

Similar Contract No.	**Information**			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in **JVCA** ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**TZS**	
If member in a **JVCA** or sub-contractor, specify participation in total Contract amount				
Employer's Name:				
Address: Telephone/fax number E-mail:				

Form EXP - 4.2(a) (cont.)

Specific Drilling and Contract Management Experience (cont.)

Similar Contract No.	Information
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section IV:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Drilling rate for key activities	
6. Other Characteristics	

Form EXP - 4.2(b)

Drilling Experience in Key Activities

Tenderer's Name: _____
Date: _____
Tenderer's **JVCA** Member Name: _____
Sub-contractor's Name[18] (as per **ITT** 33.2 and 33.3): _____
Tender No. and title: _____

Page _____of
_____pages

All Sub-contractors for key activities must complete the information in this form as per **ITT**33.3 and Section IV, Qualification Criteria and Requirements, Sub-Factor 4.2.

1. Key Activity No One: _____

	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in **JVCA** ☐	Management Contractor ☐	Sub-contractor ☐
Total Contract Amount			**TZS**	
Quantity (Volume, number or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)		Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Employer's Name:				

[18] If applicable

	Information
Address: Telephone/fax number E-mail:	

2. Activity No. Two

3. ……

	Information
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section IV:	

Form EXP - 4.2 (c)

Specific Experience in Managing ES aspects

[The following table shall be filled in for contracts performed by the Tenderer, and each member of a Joint Venture]

Tenderer's Name: *[insert full name]*
Date: *[insert day, month, year]*
Joint Venture Member Name: *[insert full name]*
Tender No. and title: *[insert Tender number and title]*
Page *[insert page number]* of *[insert total number]* pages

Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor ☐	Member in **JVCA** ☐	Management Contractor ☐	Subcontractor ☐
Total Contract Amount			**TZS**	
Details of relevant experience				

1. Key Requirement no 1 in accordance with 4.2 (c): _____

2. Key Requirement no 2 in accordance with 4.2 (c): _____

3. …

SECTION VI: ELIGIBLE COUNTRIES

Procurement Reference Number:

All countries are eligible except countries subject to the following provisions.
A country shall not be eligible if:

(a) as a matter of law or official regulation, the Government of the United Republic of Tanzania prohibits commercial relations with that country, provided that the Government of the United Republic of Tanzania is satisfied that such exclusion does not preclude effective competition for the provision of goods or related services required; or

(b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Government of the United Republic of Tanzania prohibits any import of goods from that country or any payments to persons or entities in that country.

PART 2 – Procuring Entity's Requirements

SECTION VII - WORKS REQUIREMENTS

Abbreviations

SOW Slip on Weld

BHA Bottom Hole Assembly

BOP Blow Out Preventer

OE Owner's (TGDC's) Engineer

TECHNICAL SPECIFICATIONS

1 WELLS' DATA

TABLE 1: Well data

Area	NGOZI	NGOZI	NGOZI
Field	Geothermal Prospect	Geothermal Prospect	Geothermal Prospect
Well No.	NB1	NZB3	NB5
Location ARC1960 UTM	E; 559007.367	E; 562262.695	E; 555121.333
	N; 9007816.538	N; 9002639.24	N; 9005213.887
Elevation	2322 m.a.s. l	2043 m.a.s. l	2088 m.a.s. l
Depth to be Drilled	1200m	1200m	1500m

2 OBJECTIVE OF THE PROJECT

The objective of the drilling project is to confirm the existence of an economic geothermal resource at the Ngozi area by drilling slim hole exploration wells. Continuous samples will be obtained and used to determine stratigraphy, hydrothermal alteration and signs of permeability. The wells will be used to make direct temperature measurements to determine if the reservoir is of high temperature (>200 ºC) or intermediate temperature (~150ºC-200°C). It is unlikely that the wells can sustain self-flow (unless reaching high temperature) due to the small well diameter, low water table and likely temperature in the well. The information obtained will be used to update the conceptual model as well as in the resource assessment. The information will moreover be used to design deeper exploration wells and production wells, e.g., the casing depths, and identify deep drilling targets.

3 GEOLOGY OF NGOZI

3.1 It is anticipated that the drilling will generally encounter formations consisting of porous and loose volcanic and pyroclastic ash at the top section of the wells (about 0 – 300 m). Consolidated pyroclastic and pumice materials are expected to be encountered at the middle section of drilling (300 - 500 m) while at the deeper section (cap rock comprising of the altered volcanic formations and transition to reservoir rocks) at a depth beyond 900 m depth is expected. Therefore, the wells will be cased from top to a depth of ~700 m (telescopic design, i.e. conductor casing, surface casing, anchor casing and production casing) and from that depth, it will be an open hole with perforated liner. The perforated liner is expected to have about 10 to 12 m overlap

with the casing. Figure 1 below demonstrates vertical cross section prognosis showing possible formations to be encountered at depth in the three proposed slim holes.

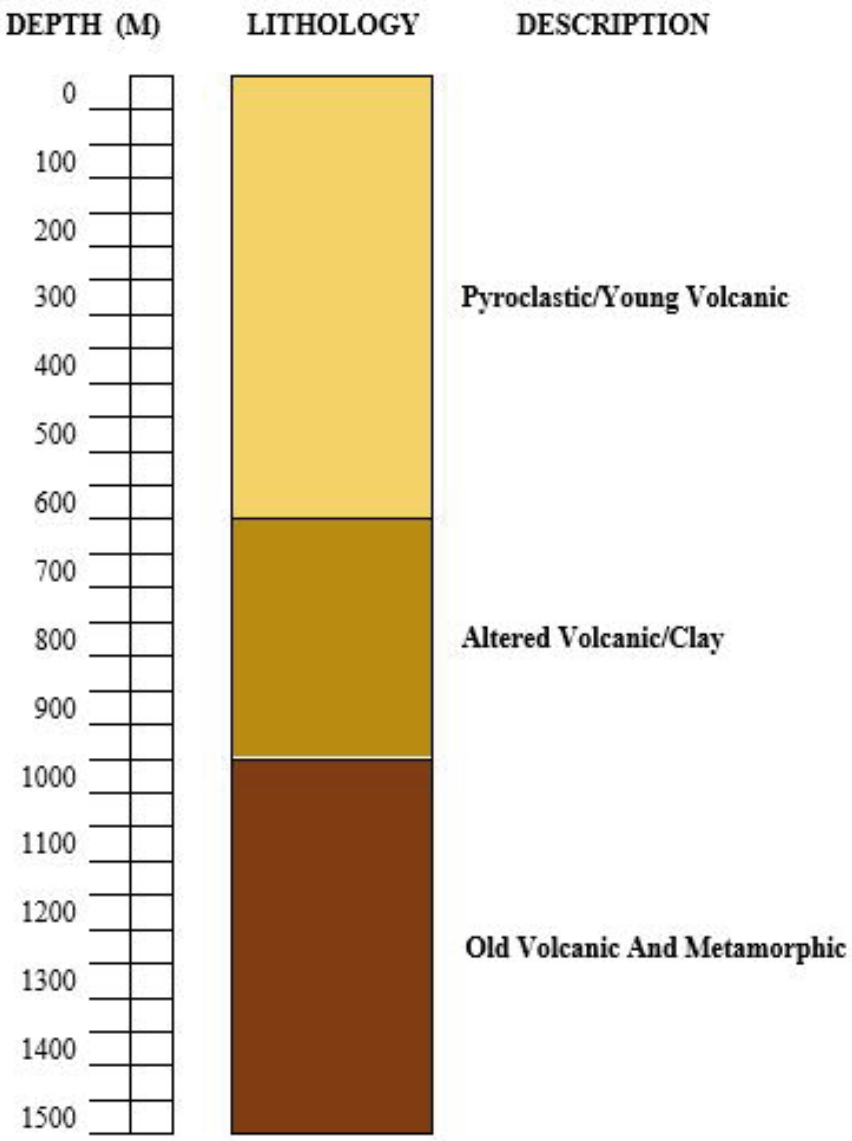


FIGURE 1: Sketch showing Ngozi stratigraphic

4 UNITS OF MEASURE

The units of measure to be used in the execution of the Contract shall be metric in accordance with System Internationale (SI), as detailed in the Canadian Association of Oilwell Drilling Contractors SI Drilling Manual, 1st Edition or Drilling Data Handbook, Sixth Edition (1991)

Exception to this shall be made only in the case of hole, drilling tool and tubular diameters, which shall be in imperial inches and otherwise as approved by the OE.

Calibration of drilling rig and associated equipment instrumentation shall be carried out by the drilling contractor.

5 DEPTH

The Contractor shall drill three vertical slim wells in the Ngozi Geothermal Prospect in the following measured depth NZB1 – 1200m, NZB3 – 1200 and NZB5 - 1500 metres, unless instructed by TGDC to complete the well at some other depth and direction. All depths to be measured shall be in metres from the drilling rig work platform. The height from the casing head flange to the drilling rig work platform, and from the cellar top to the drilling rig work platform shall be specified in all reports.

6 ORDER OF DRILLING

The plan is that drilling will start at well NZB3 followed by NB1 and finally well NB5. The order of drilling the proposed wells and location can be changed by the Owners Engineer (OE).

7 SERVICES OF THE CONTRACTOR

The Contractor shall provide qualified personnel to fully execute the drilling operations and shall perform Drilling Services at the direction and specification of the OE and in accordance with the Conditions of the Contract.

The Drilling Services shall include: -

a) Drilling of the slim wells at the sites prepared by the OE in accordance with the drilling programme and in accordance with the specifications set out in Section 10 below.

b) Being responsible for arranging and entering subcontracts for the following specialized drilling services (if needed), such as cementing, aerated drilling, fishing services etc., subject to authorisation by TGDC.

c) Mud logging.

d) Rig transfer between sites and rig demobilization.

e) Training of TGDC Staff.

8 DRILLING PROGRAMME

8.1 Preliminary Work

8.1.1 **Well Pad**

The constructed well pad has an ample space to accommodate the drilling rig and its auxiliary equipment, drilling consumables and personnel, estimated to be 35m x 35 m. A concrete cellar for each of the wells, is installed to accommodate Blow Out Preventer (BOP) during drilling and the final wellhead.

8.1.2 **Cuttings and clarifying Pit**

The cuttings pit is an open pit, roughly, 5m x 5m x 3m in size, lined with high density polyethylene (HDPE), through which the drill cuttings are directed and / or stored for later disposal to a suitable place. The returned fluid is pumped through the mud cleaning equipment consisting of a shaker, and desander it enters the pump tank to be recirculated to the well.

8.1.3 **Sampling**

The crew shall at every 2 m of drilling, collect 250 ml cutting samples and place in marked boxes when drilling with a conventional rotary bit. Once continuous coring starts, the retrieved cores will be pumped out of the inner barrel to the core tray and then placed in wooden core boxes and marked according to instructions of the Ngozi field geologist. The length of core recovered each run is expected to be measured to the nearest 2 m or otherwise as instructed by the OE and the percent (%) recovery recorded.

8.1.4 **Water Supply**

The minimum amount of water needed for drilling to be available throughout the drilling operations is 3.5 liters/second. The long-distance pipeline (up to 8 km) from the water source and pumping station has been designed and the materials to be purchased by TGDC. The installation of the water supply system will be completed before the start of drilling activities of each of the wells. TGDC will provide water to each drilling site and provide personnel for the operation of the water supply system who will work full-time in the drilling rig to adjust the pumping rate to maintain the water tank close to full. He/she will also monitor the diesel driven pumps, ensure adequate fuel supply, and check that there are no leaks on the pipeline.

9 RIG AND EQUIPMENT MOVE AND DEMOBILISATION

The drilling rig and associated equipment are designed for ease of transport as all heavy equipment are to have a lifting attachment that allows it to be transported by a so-called J-hook lift vehicle. The loads will be unloaded by a forklift truck that is also procured for the project and will be at the dedicated lay-down yard close by the site. The drilling rig will be mounted on a tracked

undercarriage to drive under its own power the last leg to the drill sites where the access roads are so steep and rough that no trucks can pass.

The tracked vehicle will be able to handle all heavy lifting on sites. No crane will thus be required for the rig-up. The rig-up should take no more than 2-3 days. The contractor shall take care of the moving of the drilling rig and all its accessories between drill pads, rigging up and demobilization.

9.1 Models and specifications for KMD30/3000 Multi-Purpose water well & drilling rig

The table gives estimated tonnage of the equipment to be moved. Please note that the table below is only a guide for the main rig equipment. There is other light equipment which has not been indicated. The Rig move will be from one drill pad to the other within an estimated maximum radius of 20 km (Appendix 2) and it takes about 100 truckloads to move one rig within a period of 2 to 3 days. In the event that a bidder is required to move the rig outside Ngozi, the rates will be prorated and agreed during contract negotiation. The following table entails the rig move list of equipment.

TABLE 2: Rig and its accessories (equipment)

Item	Name	L×W×H) Size (mm×mm×mm)			Volume (m^3)	Net Weight (kg)	Remark
1.	Rig	6500	3000	2950	57.53	15000	
2.	Mast	12650	2500	2500	79.06	13000	
3.	Shaker Tank	4300	2200	2600	24.596	6000	
4.	Suction Tank	4300	2400	2200	22.704	5000	
5.	Hopper Tank	4300	2400	2200	22.704	5000	
6.	YBW1000 Mud Pump Unit	5800	2200	1800	22.968	8500	
7.	ZTF240 Mud Pump Unit	5300	2500	2000	26.5	16000	
8.	ZTF240 Mud Pump Unit	5300	2500	2000	26.5	16000	
9.	Water tank 1	4700	2200	2300	23.782	4500	
10.	Water tank 2	4700	2200	2300	23.78	4500	
11.	Generator set + MCC set	6830	2450	2962	49.56	8000	
12.	Diesel tank	4500	2000	1650	14.85	4000	
13.	Canteen	6400	2500	2600	41.60	5000	
14.	Changing room and sanitary facilities	6400	2500	2600	41.60	5000	
15.	Office	6400	2500	2600	41.60	5000	
16.	Workshop	6480	2450	2600	41.28	5000	
17.	Dustbin 1	4500	2200	1800	17.82	4000	
18.	Dustbin 2	4500	2200	1800	17.82	4000	
19.	Dustbin 3	4500	2200	1800	17.82	4000	
20.	Air compressor	4900	1800	1800	15.88	6500	
21.	Surfactant pump	4500	2500	1700	19.13	4000	
22.	Remote operation device	6000	2400	2400	34.56	6000	
23.	Rubber Truck Carrier	7650	2750	3120	65.64	9500	
24.	Carrying platform	6000	2500	1600	24.00	3000	

25.	Forklift truck	4500	1950	2700	23.69	6000	
26.	Container 1	12220	2420	2500	73.93	21000	Solids control equipment
27.	Container 2	12220	2420	2500	73.93	22000	Cables, hoses, etc.
28.	Container 3	12220	2420	2500	73.93	24000	BOP, cementing unit
29.	Container 4	12220	2420	2500	73.93	20000	Tools
30.	Container 5	6220	2420	2500	37.63	15000	Water supply system
31.	8"Drill collar	6000	416	213	0.53	3400	Total 5 units
32.	6 1/2"Drill collar	6000	340	340	0.69	4000	Total 3 units
33.	4 1/2"Drill collar	6000	238	360	0.51	3600	Total 3 units
34.	HRQ rod	3100	460	440	0.63	915	Total 30 units
35.	NRQ rod	3100	440	420	0.57	950.4	Total 24 units
36.	DTH drill pipe	6000	600	510	1.84	2550	Total 7.5 units

9.2 Scope of service rig move and demobilization

The Service consists of moving the dismantled rig components and accessories from a finished pad to a new pad within 2 to 3 days. The contractor will also work together with TGDC personnel to train and pass knowledge transfer for future rig moves.

9.3 Obligations of the contractor

The Contractor, besides carrying out all obligations as stipulated in this Contract, the cost of which is deemed to be included in the Contractors charges for rig moving services, shall undertake the following:

(a) Rig down
(b) Transportation of rig and associated equipment between well pads
(c) Rig up

9.4 Equipment and Expertise to be provided by the Contractor

The Contractor shall be required to rig down, transport and rig up the rig as per TGDCs requirement by providing all lifting/ loading equipment, materials and manpower and any other necessary item required to perform the Services other than those provided by TGDC. This will include but not necessarily limited to the following **(Table 3):** -

TABLE 3: Rig move Expertise and experience.

ITEM	REQUIREMENT
RIG DOWN	1. The Contractor should show **Proof of experience** in rig down. He should give a brief description of the sequence of rig down and the necessary precautions. 2. The Contractor should demonstrate knowledge of rig equipment and priority loading.
RIG UP	1. The Contractor should show **Proof of experience** in rig up. He should give a brief description of the sequence of rig up and the necessary precautions. The Contractor should demonstrate knowledge of rig equipment and priority unloading.
EQUIPMENT REQUIREMENT	The Contractor should show **Proof of ownership** of the following rig move equipment: - 1. At least 2 No. x 10-ton Cranes in good mechanical and working condition 2. At least 4 No. 6x4 prime movers in good mechanical and working condition with at least 2 high bed and 2 low bed trailers of 40 ft long. 3. At least 1 No. high sided trailer of 12 m long and 6x4 trailer head 4. Proper latching gear **Note:** The Contractor should **show proof** that the equipment is well serviced and maintained by providing all the necessary **service and maintenance information**
ADDITIONAL INFORMATION	The Contractor should provide the following: - 1. Attach CVs of key rig move personnel 2. Indicate number of days they can take to move a rig within a distance of 20 km between well pads 3. Any other information relevant to the rig moves services.

The contractor shall ensure that their equipment is safe and in good operating conditions at all times.

9.5 Contractor's Personnel, Transport and Accommodation

a) **Contractor's Personnel**

The Contractor shall provide fully qualified and experienced Personnel to carry out the rig move Services. As part of their tender, the tenderer shall provide C.V's of key rig personnel.

b) **Medical Care**

The Contractor shall be liable for all medical expenses of their personnel.

c) **Transport and Accommodation**

TGDC shall be responsible for the transportation and accommodation of contractor's drilling crew members that are specified as key personnel in the project.

9.6 Standard of Performance

The Contractor shall perform the Service and carry out their obligation with due diligence. TGDC shall provide the Contractor with a flat rig pad and access roads. Moreover, TGDC personnel will work together with the Contractor during the rig down, rig move and rig up exercises using some minimum TGDC equipment as directed during specific rig moves.

10 WELL DRILLING

10.1 Conductor pipe installation

On top of the cellar, a 13 3/8" conductor casing will be set at the appropriate height for the wellhead and 13 5/8'' M API flange shall be welded. The contractor will be required to install the rotating head to close around the drill rods that will divert the returning drilling fluid or dust to the flow line. The flow line will have butterfly valve for rapid closing in the remote chance of a kick from gas. The wellhead will have a valve to measure wellhead pressure and a 2" valve is installed on the wellhead as a "kill line" for eventual well control purposes. An auxiliary pump will always be connected to the kill line valve to allow pumping on the well to always keep it full during drilling for well control. During drilling with total loss of circulation, water shall be continuously pumped down the annulus via the kill line.

10.2 Section 1. Surface casing to 100 m

- Drill ahead with a 12 1/4" tricone drill bit, using spud mud, maintaining the desired well verticality. The bottom hole assembly (BHA) is:

TABLE 4: BHA for drilling 12 1/4" section

12 ¼" drill bit thread 6 5/8" Reg.
12 ¼" bit stabilizer box-box thread 6 5/8" Reg. with one-way valve by bit
2 x 8" collar 6m, pin-box thread 6 5/8"
12 ¼" stabilizer pin-box thread 6 5/8"
8 x 8"collar 6m, pin-box thread 6 5/8"
1 x x-over pin-box 6 5/8" Reg. to NC46
6 x 6 1/2" collar 6m, pin-box thread NC46
1 x cross-over to 3 ½" drill pipe

- If significant losses are encountered, then switch to water with periodic mud sweeps as required or seal the loss by placing cement plugs if directed by the OE. Minor losses shall be treated with loss of circulation material (LCM). In case of slow progress or large fluid losses consider switching over to with a 12" DTH air hammer.

- The precise casing point shall be selected by the site geologist and the drilling engineer at a depth close to 100 meters, based on lithology, loss circulation zones, and the presence of competent formation. Take a drift shot at casing depth.
- Circulate the hole clean and run a wiper trip, placing a mud pill on the bottom. Break out and lay down 12¼" bit assembly.
- With the casing on the pipe rack, remove the thread protectors, clean the shipping grease with a solvent and apply new high – temperature grease. Install float shoe on bottom of first casing and a stab-in float collar on top and two centralizers.
- Run the 9⅝" casing to 100 meters. Install spring-bow centralizers every three joints.
- Run in drill string with stab-in stinger to mate with the float shoe. Cement according to inner string cementing practice. In case there is a large loss of circulation or total loss, assess at which depth it is and consider modifying the placement procedure by cementing only up to the loss zone via the inner-string method, say half the calculated volume, and then immediately switch over to "bull heading" for pumping the remaining volume
- Wait on cement until cement return samples are set.
- Cut the 9 5/8" casing to the desired level.
- Weld slip-on (SOW) flange API 11" 3M the 9 5/8" casing (fabricated from a blind flange). Follow welding procedures and employ a certified welder.
- Install a BOP assembly as follows: Mud cross spool, Annular and Rotating head
- The flow line shall have a butterfly valve that is easily accessible so that it can be rapidly closed in it there should be a kick.
- Test BOP assembly and casing according to instructions. Record test on the daily drilling report.

10.3 Section 2. 8 1/2" stage anchor casing

- Drilling cement and formation to 300 meters with an 8 ½" rotary drilling. The bottom hole assembly (BHA) is made up of:

TABLE 5: BHA for drilling 8 ½" section

Drill string for 8 ½" section
8 ½" drill bit, thread 4 ½" Reg.
8 ½" bit stabilizer box-box thread 4 ½" Reg. NC46 with one-way valve by bit
2 x 6 ½" collar 6m, pin-box thread NC46
8 ½" stabilizer pin-box thread NC46
10 x 6 ½" collar pin-box thread NC46
1 x cross-over to 3 ½" drill pipe

- Using this assembly, drill a straight hole with mud, or switch to water if required, to a depth of 300 meters. The exact casing point depth shall be selected by the OE based on lithology, loss – circulation zones, and the presence of competent formation.
- Control loss circulation with LCM or with placement of cement plugs as needed. Take drift shots at ~100 meters intervals.
- Circulate hole clean. Pull out of hole to casing shoe, and if there are tight spots in the well run back to bottom as a wiper trip and placing a high – viscosity mud pill on the bottom.
- If deemed necessary, run temperature log to identify any loss zones and to obtain estimate of bottom hole circulation temperature (BHCT) to select proper cement retarder concentration. Measure fluid loss exactly with the well filled to the brim. If deemed relevant, measure thermal recovery for two (2) hours – eight (8) hours for formation temperature estimation (Horner plot). Carry out any other down-hole logging that has been decided according to the logging program.
- With the casing on the pipe rack, remove the thread protectors, clean the shipping grease with a solvent and apply new high – temperature grease. The first and last four casing joints shall be glued (Bake-Lock) or tag welded to prevent unscrewing. Install float shoe on bottom of first casing and two centralizers. Install a stab-in float collar on the second casing joint.
- Run in the anchor casing, insuring the correct tightness of each connection. Install centralizers every three joints (~20 m). In the open hole spring bow but in the casing-casing annulus rigid type centralizers.
- If there is a loss in the well, maintain flow on the annulus to prevent kicks.
- Set casing 0.5 meter above the bottom or fill. Chain down the casing to the rig.
- Circulate water through drill strings for a period of two (2) hours – three (3) hours or when returning temperature has stabilized.
- Carry out placement of cement according to inner sting cementing practice. If there are no cement returns immediately switch over to “bullheading” by pumping cement down the annulus via the kill line and annular preventer closed. The slurry quantity should be enough to fill the annulus volume to 100 m or until a high pressure is reached.
- In case there is a large loss of circulation or total loss, assess at which depth it is and consider modifying the placement procedure by cementing only up to the loss zone via the inner-string method, say half the calculated volume, and then immediately switch over to “bullheading” for pumping the remaining volume.
- Cut the 7” casing to the desired level.
- Weld the casing head API 7 1/16” 3M the 7” casing. This is the permanent casing head of the well. Follow welding procedures and employ a certified welder.
- Install a BOP assembly as follows: Mud cross spool, Double Ram, Annular and Rotating head

- The flow line shall have a gate valve that is easily accessible so that it can be rapidly closed in it there should be a kick.
- Test BOP assembly and casing according to instructions. Record test on the daily drilling report.

10.4 Section 3: 4 ½" stage production casing

- Drill cement and formation to 700 meters with a 6 1/8" rotary drilling assembly. The bottom hole assembly (BHA) is:

TABLE 6: BHA for drilling 6 1/8" section

Drill string for 6 1/8" section
1/8" bit 3 ½" Reg.
1/8" bit stabilizer box-box thread 3 ½" Reg. í NC31 (2 7/8" IF) with one-way valve
2 x 4 ½" collar 6m, pin-box thread NC31 (2 7/8" IF)
1/8" stabilizer pin-box thread NC31 (2 7/8" IF)
10 x 4 ½" collar pin-box thread NC31(2 7/8" IF)
1 x cross-over to 3 ½" drill pipe

- Using this assembly, drill a straight hole with mud, or switch to water if required, to a depth of 700 meters. The exact casing point depth shall be selected by the site geologist and drilling engineer based on lithology, loss – circulation zones, and the presence of competent formation.
- Control lost circulation with LCM or with placement of cement plugs as needed. Take drift shots at ~100 meters intervals.
- Circulate hole clean. Pull out of hole to casing shoe, and if there are tight spots in the well run back to bottom as a wiper trip and placing a high – viscosity mud pill on the bottom.
- If deemed necessary, run temperature log to identify any loss zones and to obtain estimate of bottom hole circulation temperature (BHCT) to select proper cement retarder concentration. Measure fluid loss exactly with the well filled to the brim. If deemed relevant, measure thermal recovery for two (2) hours – eight (8) hours for formation temperature estimation (Horner plot). Carry out any other down-hole logging that has been decided according to the logging program.
- With the casing on the pipe rack, remove the thread protectors, clean the shipping grease with a solvent and apply new high – temperature grease. Measure the exact length of each casing and casing tools and fill out the casing tally form. A float shoe is installed on the lower end of the first casing and a stab-in float collar on top. The first and last four casing joints shall be glued (Bake-Lock) or tag welded to prevent unscrewing. Install casing centralizers two on the first pipe and then on every two joints.

- Run in the production casing, insuring the correct tightness of each connection.
- If there is a loss in the well, maintain flow on the annulus to prevent kicks.
- Set casing 0.5 meter above the bottom or fill. Chain down the casing to the rig floor. Run in the stab-in drill string and engage the float collar receptacle.
- Rig up cementing unit which consists of a jet mixer that will prepare the slurry and then the slurry will go to the mud tanks to be blended further in what is referred to as a batch mixer. When enough slurry has been prepared the slurry is pumped with the rig pumps.
- Circulate water through drill strings for a period of two (2) hours – three (3) hours or when returning temperature has stabilized.
- Carry out placement of cement according to inner sting cementing practice. If there are no cement returns immediately switch over to "bull heading" by pumping cement down the annulus via the kill line and annular preventer closed. The slurry quantity should be enough to fill the annulus volume to 300 m or until a high pressure is reached.
- In case there is a large loss of circulation or total loss, assess at which depth it is and consider modifying the placement procedure by cementing only up to the loss zone via the inner-string method, say half the calculated volume, and then immediately switch over to "bullheading" for pumping the remaining volume.
- Take down the BOP stack and cut the 4 ½" casing off 3 cm above the casing head. Then reassemble by including the final expansion spool and master valve first and then the Double Ram, Annular and Rotating Head preventers. Test all BOP´s.

*10.5 **Section 4: HQ***

- Using a HQ coring assembly, drill a straight hole with water, to a depth of 1500 meters. The exact casing point depth shall be selected by the site geologist and drilling engineer.
- Run holed liner NW to total depth and let stand on bottom or hang to ensure that the well stays open for logging and testing. Unscrew or liner near 680m. The section below 700 m must be perforated (holed) to allow injection and possible flowing of the well. While running the liner maintain constant water pumping on the annulus. Carry out a step rate injection test in three (3) flow steps, with duration of three (3) hours each. At the same time, a pressure tool is located near the bottom of the well to monitor the response. This shall allow the determination of the injectivity index II (l/s/bar), an indicator of permeability.
- Close master valve two side outlets. Nipple down blowout preventer and install a flange on top of the master valve with a 3"x900 ANSI top valve for logging tool access to the well.
- Release rig.
- **Figure 2 below** shows the Ngozi slim well casing program

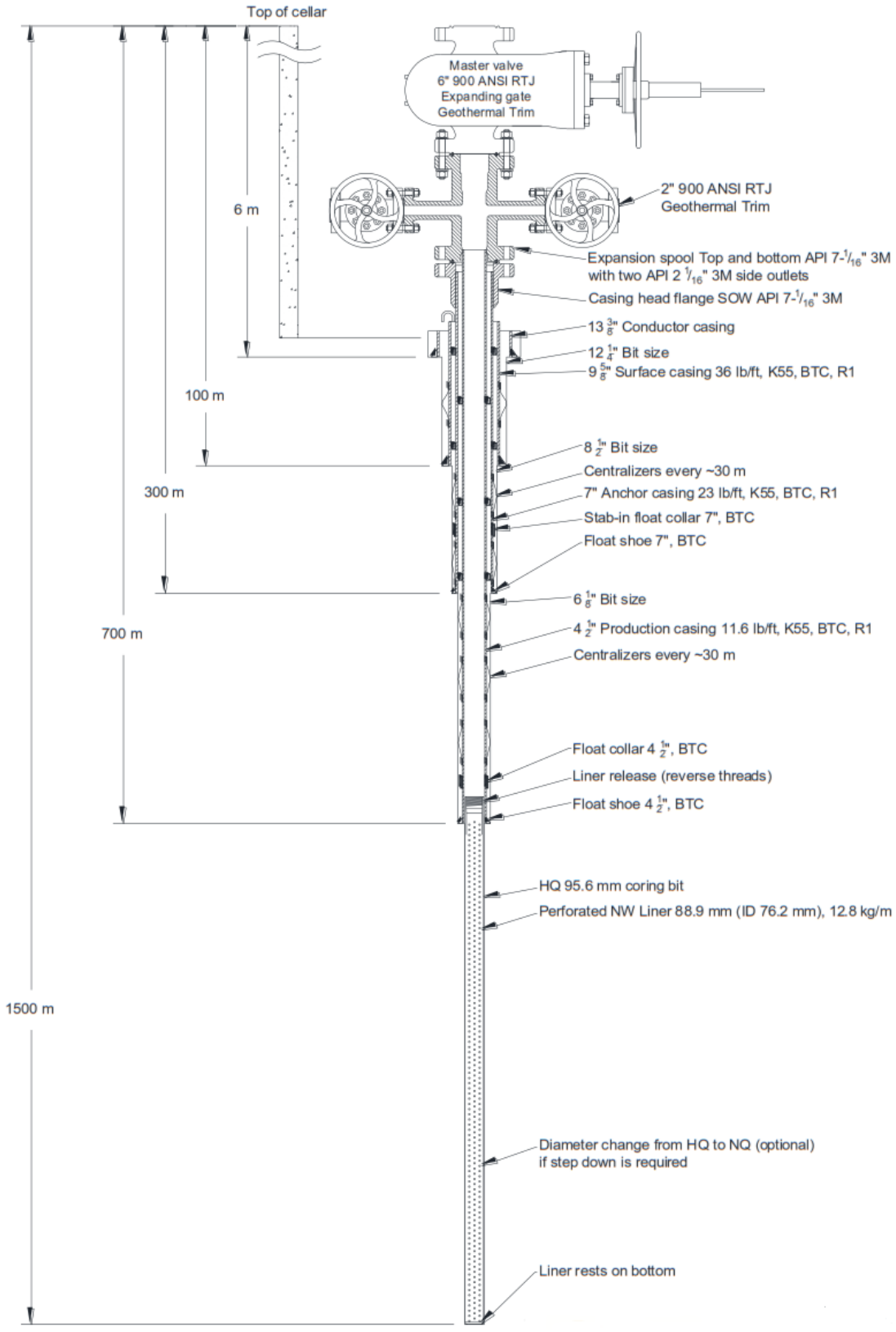


FIGURE 2: Ngozi casing program for the slim wells

11 DRILLING FLUID PROGRAM

The drilling fluids for rotary drilling and coring shall be clear water, bentonite mud, polymers, and cutting oil. Bentonite (~4% by wt.) in water (pH ~9) will be used to prepare drilling mud which has superior well cleaning. A hopper jet-mixer will be used to prepare the mud and agitators keep it fluid in the pits. Water with polymer is used to improve hole cleaning and acts as a lubricant and vibration dampener. Other chemicals may have to be used but only when required. The mud properties will be maintained within certain limits and checked, and the properties of drilling fluids monitored using field mud lab equipment: viscosity, density, pH value, gel strength, sand content, filtration loss etc. Water is, especially after encountering losses, the preferred drilling fluid in core drilling operations. Adding food grade oil to the water enhances the lubricity and may be used to reduce the torque for drilling very hard formations. The water return velocity should be maintained 25-30 m/min. It has good cooling properties and acts as moderate lubricant and vibration dampener. Occasional polymer or mud pill sweeps will be used to ensure that the hole stays clean.

- **Surface casing Phase (to 100 meters)**
    - Mud Type: Spud mud
    - Recommended Chemical Concentration:
    - Bentonite: 50 kg/m3
- **Anchor casing Phase (to 300 meters)**
    - Mud Type: Prehydrated and Conditioned Bentonite Mud
    - Bentonite: 40 kg/m3
    - Caustic Soda: 0.3 kg/m3

Mud Properties:

- Viscosity: 35-38 seconds (55 seconds for high – viscosity pill)
- pH: 9

- **Production casing Phase (to 700 meters)**
    - Mud Type: Prehydrated and Conditioned Bentonite Mud
    - Bentonite: 40 kg/m3
    - Caustic Soda: 0.3 kg/m3

Mud Properties:

- Viscosity: 35 seconds – 38 seconds (55 seconds for high – viscosity pill)
- pH: 9

- **HQ Stage**

Drilled with clear water. Occasional polymer or pill sweeps will be used to ensure that the hole stays clean.

12 BOP AND PIPE INSPECTIONS

The Drilling Equipment needs to be inspected prior to mobilization to the rig site. During the project the BOP´s shall be pressure tested after installation and before drilling out cement from the production casing shoe. The secondary protection is provided by a rotating head or stripper that seals around the drill rods (not 100%) and a valve on the flow line. This equipment also must be pressure tested after installation. Drills are carried out with each shift crew once new on site to prepare for eventual kicks.

The BOP shall be function tested regularly as outlined in section 8.6.1. One part of the well control system is a lubricator that is placed on the drill rods before a run is made to recover the core barrel. The lubricator will also have a BOP for the wireline. The seal for the wireline needs to be checked and the lubricator can quickly be connected to the mud pump to pump down the coring string.

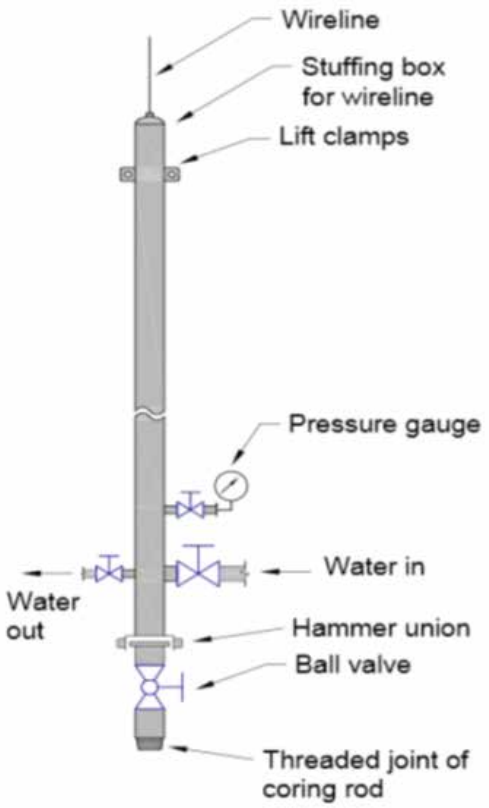


FIGURE 3: Lubricator for retrieving core barrels and wireline logging.

13 CEMENTING PROGRAMME

Introduction

The three (3) casing strings are to be cemented back to the surface. The inner-string cementing procedure will be used. A stinger on the drill pipe is lowered into the well to mate with the inner-string float valve. The cement slurry thus initially travels down inside the drill string before rising in the annulus back to surface. A casing cementation program detailing slurry volumes and compositions, displacement volumes, and pumping strategy will be provided by the cementing specialist and approved by OE prior to each cement job. Guidelines to the cement dry mix:

TABLE 7: Slurry mixing materials

Material	Amount
Portland cement	100 kgs.
Friction reducer	to be determined
Retarder for high temp.	0.0 kg. – 0.5 kgs.
Water	80 litres
Approximate slurry density	1.8 kg/litre

Condition and cool the well for 1-2 hr by circulating cold water prior to the cementing operation. Consider using additives (caustic soda or dispersant) to condition the wellbore. Close the annular BOP preventer and open the side outlet to the cellar. Pump a predetermined slurry volume of cement slurry down through the drill string and continue until cement returns are obtained. At the end clean the drill pipes by displacing the cement with a calculated quantity of water.

If returns to the surface are not achieved with the primary cement job it is important to continue the cementing operation by switching immediately to pumping the slurry on to the casing annulus called “bullheading” or “top-job”. If that is not possible, e.g., lack of materials, the annulus down to the last casing shoe is immediately flushed with fresh water prior to any backfilling operation.

In case there is a large loss of circulation or total loss, assess at which depth it is and consider modifying the placement procedure by cementing only up to the loss zone via the inner-string method, say half the calculated volume, and then immediately switch over to “bullheading” for pumping the remaining volume.

A cementing manifold and backfill line are to be installed prior to the cement job to facilitate this operation. Mica flakes should be on site for the cement operation to be added by hand to the cement slurry.

14 WELL SAFETY

*14.1 **BOP Pressure Test***

The BOP´s are to be pressure tested individually immediately after nippling up and before drilling out the cement inside the casing. The BOP is to be tested at a pressure of 10 bar and held for fifteen (15) minutes and monitor drop.

Tests for Blow-Out Prevention Equipment

- Daily checks by closing pipe rams shall be made while drilling is in progress.
- The blind rams shall be closed on each occasion that the drill string is pulled out of the hole.
- Periodic pressure tests of the B.O.P. stack shall be made from time to time as directed by the OE.
- The BOP´s shall be function tested once a week

14.2 Formation Leak Off Tests:

Formation leak off test is not required.

14.3 Blow Out Prevention Equipment

TGDC will provide the contractor with BOP equipment for different sections of the wells as shown in figure 4 below:

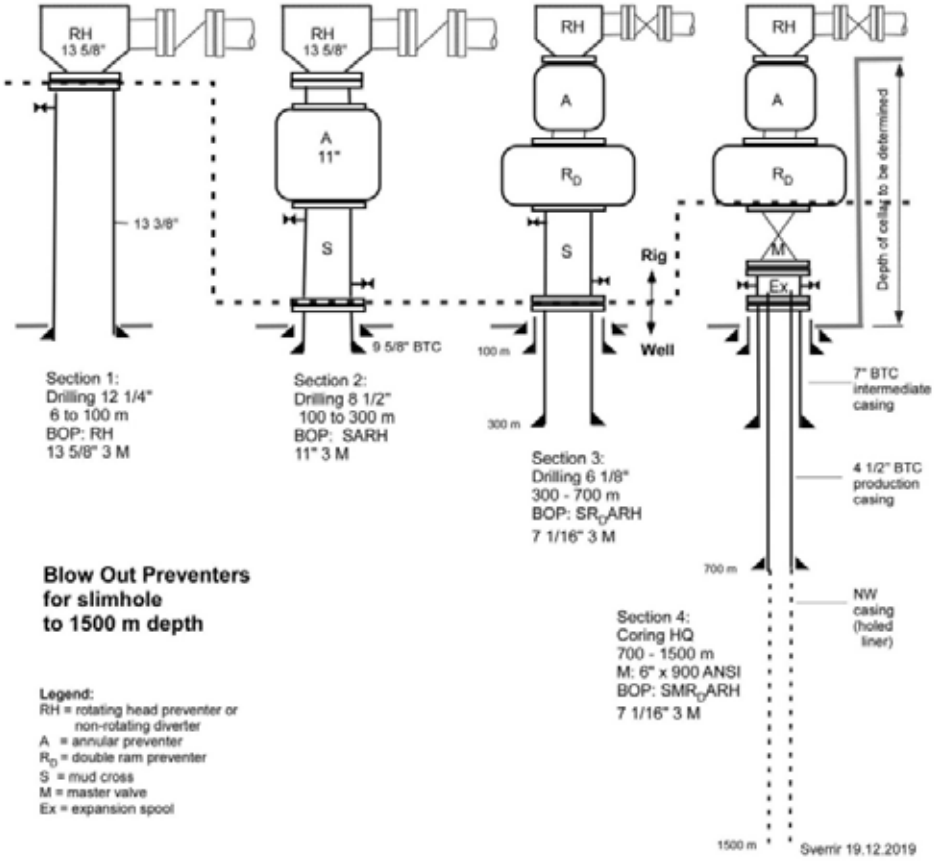


FIGURE 4: BOP for each stage of drilling. Above the dotted line are the BOP's and spool belonging to the rig and below the dotted line belongs to the well.

15 HYDROGEN SULPHIDE MONITORING

H_2S, CO and O_2 gas monitoring equipment shall be maintained in good working condition throughout the whole operation. At minimum, detectors shall be place at the rotating head, in the cellar and at the end of the return flow area and set off an alarm if H_2S or CO concentrations

exceeds the specified limits. When working in and around the cellar and shale shakers, the rig crew shall also be equipped with personal hydrogen sulphide (H_2S) and carbon monoxide (CO) gas detectors.

16 RIG INSTRUMENTATION SYSTEM

The main goal in geothermal drilling is to locate permeable zones with desirable physical characteristics to utilize. In some cases, information on the reservoir is limited to a predicted temperature from geothermometry but in others there are some more definite targets. Monitoring the drilling data serves the main purpose in gather together all possible information during the drilling operation. This should aid the drillers in the drilling effort and allow review of any drilling problems encountered. Beyond the analysis of the cuttings and the penetration rate significant information can be attained from the circulation fluid and related drilling data.
The rig data and drilling advance information shall be entered on a standard daily drilling report.
The geothermal data collection has been divided into three main categories:

- Measuring the gain or loss of the circulation fluid.
- Measuring the temperature of the circulation fluid up and down.
- Measuring the amount of the circulation fluid pumped down and the pressure of the pumps.

As optional equipment to be provided is a digital rig system. The contractor shall permit such a system to be installed and assist in providing access to pressure ports etc. for the sensors. Parameters that are recorded digitally at 5 second intervals are the include:

- total weight of the drill string
- rotation of the bit
- height of the elevator
- penetration rate (calculated)
- torque of the drill string
- pressure of the pumps
- fluid temperature down
- fluid temperature up
- fluid differential temperature (calculated)

17 LOGGING ACTIVITIES

The contractor shall perform mud logging activities during drilling of the wells. TGDC shall provide downhole logging equipment (e.g., temperature, pressure, and spinner). TGDC will carry out well completion test after drilling with the assistance of the contractor. TGDC may also carry out some important tests during drilling of the wells as deemed necessary by the OE. The contractor will allow such tests to be carry out.

17.1 Mud- logging activities

The following specifications apply to the different tasks:

17.1.1 **Mud Logging Expert:**

The Onsite Geologist (from the contractor) should be present at the drill site during drilling of two wells in Ngozi (approximately 60 days per well). The Onsite Geologist will provide geological consultation, analyse drill cuttings and cores with focus on hydrothermal alteration. He/she will be responsible for collecting, preparing and interpreting all drilling information and be issuing consultation regarding the geothermal drilling as well as the wellbore information and conditions. He/she will have a leading role in the well control procedures especially in preparing the right mud to control the well. If needed, during drilling, the onsite geologist can be reached at all hours.

The onsite geologist will also have the responsibility of providing hands-on training to the TGDC mud logging experts, that will be available during drilling.

18 DRILLING METHODS AND PRACTICES

- The three geothermal slim wells shall be drilled vertically unless otherwise directed by the OE. The Contractor shall perform all Drilling Services with due diligence and care and in accordance with good drilling practices. All drilling records and correspondences shall be written in English Language.

- The Contractor shall always maintain well control equipment in good operating condition and shall use all reasonable means to prevent and control blowouts.

- The Engineer shall have the responsibility of always controlling the drilling fluid programme during the drilling of the well, and both the Contractor and the OE shall have the right to make any tests of the drilling fluid which may be necessary.

- The Contractor shall keep a drilling time log. The log shall always be subject to inspection by the OE and, upon completion or abandonment of the well to which it pertains, shall become the exclusive property of TGDC.

- The contractor shall make every effort to drill the slim wells as specified by TGDC and will make diligent efforts to achieve the drilling parameters as specified in the drilling program.

- The Contractor shall observe drill stem design operating limits and recommended practices contained in API Bulletin RP76 and these shall not be exceeded or contravened during operations.

- The Contractor shall during the performance of Drilling Services maintain in good working order all necessary equipment including firefighting equipment satisfactory to TGDC, required for the safety of the Drilling Rig, the Contractor's Personnel and third parties.

- The Contractor shall allow the OE and/or TGDC's safety officer from time to time to inspect, to test or to require the testing of the Contractor's safety equipment on the site and to report upon procedures used by the Contractor, with a view to assessing the effectiveness of such safety equipment or procedures in connection with safety of personnel. For the purposes of this subsection, the Contractor shall operate in the specified manner, any equipment on the site to allow the safety officer to check its performance. The Contractor shall comply with all reasonable recommendations of TGDC's safety officer or the Engineer.

- The Contractor shall promptly notify the OE if at any time during drilling operations a formation is encountered which in the opinion of the Contractor shows evidence of being steam bearing or has lithologies which indicate such. Under such a situation the OE may instruct the Contractor in writings to temporarily stop drilling to decide what further measures should be adopted. During any such period the Contractor shall be paid the applicable Standby with Crew Rate.

- Drilling Services, other than mobilization, demobilization, Mud logging and moving the Drilling Rig shall be performed by the Contractor on a 24 hour/day, 7-days/week basis.

- Drilling management meetings shall be held between TGDC, Consultant and the Contractor on a weekly basis. The meetings shall be attended by TGDC's Representatives, Consultant, and the Contractor's Representatives. The main agenda of the meeting shall be to review the work progress. TGDC's Representatives shall record the business of management meetings and provide copies of the record to those attending the meeting. The responsibility of the parties for actions to be taken shall be decided by TGDC's Representatives either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

19 CASING PROGRAMME

- The nominal casing programme shall be as indicated in Section 6.2 and Figure 2 above. The setting depth of each string of casing, the amount of cementing and the process to be used in cementing, shall be specified by the OE at the time of the setting of each string of casing.

- The Contractor shall run all strings of casings as necessary, subject to and under the direction of the OE.

- The Contractor shall keep thread protectors on the casing until it is taken from the racks to be run into the hole and shall lubricate the thread as it is made up with thread compound provided by TGDC. The Contractor shall preserve all protectors and after each well is completed shall break down all surplus casing, put protectors on same.

- TGDC reserves the right to require the Contractor to set strings of casing or liners in addition to those listed. The Contractor shall provide rig time for cementing and testing cement on such liners and strings of casing. The Contractor shall be paid for such additional operations as specified in Schedule A.

20 FORMATION DIFFICULT OR HAZARDOUS TO DRILL

If fluid flow, abnormal pressure, loss of circulation, heaving shale, hole collapse, or other similar condition is encountered which makes drilling abnormally difficult or hazardous, causes sticking of drill pipe or casing, or other similar difficulty which precludes drilling ahead under reasonably normal procedures, the Contractor shall, in all cases, without delay, under the direction of the OE, exert every reasonable effort to overcome the difficulty.

If total loss of circulation or partial loss of circulation is encountered down to the production shoe depth the Contractor shall, without undue delay and under the direction of the OE, exert every reasonable effort to overcome the loss. Below the production casing shoe, the Contractor shall, under the direction of the Engineer, exert every reasonable effort to drill ahead without blocking or sealing fractures or permeable zones. Lost circulation materials, cement and mud slugs may not be used in the HQ diameter hole except with prior approval of the OE.

21 HEALTH, SAFETY AND ENVIRONMENTAL SUBJECTS (HSE)

HSE takes precedence in all operations. Everyone on the drill site must always observe safety regulations. The following are the minimum HSE requirements for the drill site:

*21.1 **Health***

Sufficient potable drinking water shall be provided at the drilling site all the time. Functional and clean washrooms for both genders shall be provided at the rig site. Proper drainage system to the soak pit shall be maintained.

*21.2 **Safety***

All personnel on site must be in full personal protective safety wear.

- Safety/drilling operations meetings must be attended by all crew.
- Safety signage must be displayed and adhered to by all on site.
- Safety equipment must be in good working condition e.g., Fire extinguishers, gas detectors, safety harnesses.
- Visitors must report to safety booth for briefing by the OE.
- No visitors will be allowed on site while critical operations are being performed e.g., Rig move, Cementing, Casing and in cases of blowouts.
- Speed limit within the drill site is 10 km/h and within the field is 30 km/hr.
- All vehicles on site shall be parked at the designated area and any other movement within the pad must be authorized by the Drilling Engineer.
- All accidents and near misses must be reported and recorded according to regulations.
- Job Safety Analysis shall be conducted in all pre-job meetings to make personnel aware of prevailing hazards, meditative measures, and their responsibility both as individuals and as groups towards maintaining a safe workplace.
- Permit to work system shall be implemented to control non-routine high-risk operations to ensure that proper planning and consideration is given to risks of such jobs for their safe completion.
- Log out Tag Out /Try Out procedures shall be implemented to safeguard workers from hazardous energy that can be released by equipment or machinery during maintenance work.
- Emergency action/ evacuation plans, and procedures shall be executed through scheduled drills to ensure that personnel practice and are aware of their respective responsibilities in the event of emergencies to reduce or eliminate confusion, injury, and property damage during emergencies.
- Site safety rules shall be enforced to ensure safety of all persons and equipment on site.
- The drills including but not limited to fire drills, BOP drills and H_2S drills should be conducted on regular basis.
- All personnel working on the rig site must be in full PPEs
- All personnel working at height must wear safety harnesses
- Using cellphones at the rig site is prohibited. The Drilling should designate an area where employees can use such devices
- All crew have the authority to stop an operation if that operation is deemed to be a safety hazard, can damage equipment, or make a situation worse.
- Lifting equipment shall be kept in good condition and inspected as appropriate.

NOTE

The HSE officer shall ensure that operations go ahead if and only if an active gas monitoring system is in place including a windsock or a flag whichever is available. Moreover, sufficient sand must always be at the foot of rig floor escape slide. No vehicle shall be parked next to the rig floor escape slide.

21.3 Environment

All environmental issues are to be addressed to the Environmental Engineer who will be available at the site.

- Littering of any kind on the drilling pad should be avoided.
- Oil spills at the rig sites should be avoided at all costs as it is a hazard to the environment.
- Used oils should be properly stored according to MSDS requirements before it's delivered for disposal.

22 TRAINING TO TGDC STAFF

The Contractor is required to drill three slim wells in Ngozi, Tanzania, using a small drill rig owned by TGDC. In addition to drilling services, the Contractor is required to train TGDC staff as drilling crew in such a way that they will be in a position to carry out the drilling of the last well more or less by themselves under the supervision of a drilling contractor.
The drilling contractor shall offer the services of a full drilling crew for the three wells, where he will gradually train the TGDC experts during the drilling with the purpose of the TGDC drilling crew taking over most of the drilling management during drilling of the third well.

TGDC shall avail full team of crews to work with Contactors experienced Mechanic, Drillers and Roughnecks. The contracted experienced crews shall work with and train the TGDC crew. The purpose of having the extra experienced crew members is to be able to have all procedures, reporting, maintenance system up and running immediately to industry standard.

23 REPORTS TO BE FURNISHED BY CONTRACTOR

The Contractor shall keep and furnish to the OE a daily drilling time log showing the depth of the hole and such other data as required by the OE including but not limited to:

- Drilling string (I.D. and O.D. of drill pipe, collars, weight on bit, rpm, etc.)
- Bit Records (% dull teeth, bearing, gauge etc)
- Mud Properties (weight, viscosity, water loss, chloride, pH, etc.)
- Hydraulics (circulation rates, pressure, pump liner size, length of stroke, stroke per min, etc.).

All labour, equipment, materials, special tools, supplies, and services furnished by the Contractor for which TGDC is obliged to reimburse the Contractor shall be recorded as provided on the daily drilling report or, in the case of materials, on the material shipment order. No payment shall be made by TGDC in respect of any items which are not so recorded.

24 DEFINITIONS AND APPLICABILITY OF RATES OF REMUNERATION

24.1 Mobilization

All moving in from base to the project site and rigging up operations on the first drilling location shall be performed by the TGDC. Mobilization shall be considered completed when all equipment is rigged up, and the Contractor is ready to start drilling.

24.2 Demobilization

Upon rig release from the last well to be drilled under this Contract, the Contractor shall remove all rubbish, debris and his equipment from the last drill site. The drilling rig and all accessories to be allocated at base Camp in Mbeya. All materials, work and services required for demobilization away from the project location by the Contractor shall be paid for under **Schedule A**.

24.3 Moving Between Well Locations

From the moment drilling operations on a well are completed, and the OE has certified the completion of drilling operations, the rig will be understood to be moving between locations, until the moment the rig is ready to spud in on the following well. Such moving operations shall include the removal of all rubbish, debris and equipment from each site to the satisfaction of the OE. Such moving operations shall be paid for under Schedule A; Rates of Remuneration. TGDC shall provide diesel fuel (except for personnel transport vehicles) for rig trucks and lifting equipment to be used in shifting the rig between well locations.

24.4 Operating Rates

In preparing the chargeable time to apply to the various rates (including no rate time), the actual time will be adjusted to the nearest half – hour, such that the daily total time shall not exceed 24 hours.

Operating Rates include: -

- **Working Rate:**

For all work performed requiring any part of the drilling rig equipment in operation with full crew; payment of rates for part days shall be calculated on time basis to the nearest half hour. Such operation shall be paid under Schedule A.

- **Stand-by with Crew Rate**

This payment rate will be applied when the drilling rig and personnel are not operating due to instructions from TGDC, although in readiness to begin or resume operations, and shall include waiting on TGDC provided permits and access to sites, well logging and downhole measurements and special operations. Stand-by with Crew will be paid under **Schedule A**.

- **Shut down**

If it is necessary to shut down the rig for repair, maintenance, or waiting on materials, services or other items to be furnished by the TGDC, or for any suspension of activity required by TGDC for substantiated reasons, the Contractor shall be allowed compensation at the Stand-by with Crew Rate for such shut-down.

- **Air Drilling Package Operating Rate**

This payment rate shall be applied when, as directed by the OE, the Contractor operates the Air Drilling equipment. Air Drilling Package Operating Rate shall be paid for under **Schedule A**.

24.5 ***Revision of Rates:***

The rates and or payments herein set forth due to the Contractor from TGDC shall be revised in the event of a change in Tanzania legislation or regulations.

25 SUPPLY SCHEDULE

TABLE 8: Responsibility matrix for labour, equipment etc. to be provided at the well sites

SN	LABOR, EQUIPMENT, MATERIALS, SUPPLIES AND SERVICES TO BE PROVIDED AT THE WELL SITES	PROVIVED BY		AT EXPENSE OF	
	Drilling Contractor = C_D; ***Tanzania Geothermal Development Company= TGDC***	TGDC	C_D	TGDC	C_D
	Description				
1.	Complete drilling rig, set out in Schedule C, capable of carrying out the programme as specified by the OE	X		X	
2.	All personnel and supervision necessary to operate the Drilling Rig as set out in Schedule B.		X		X
3.	Transportation of contractor personnel as listed in Schedule B between Camp site and drilling site		X		X
4.	Transportation of TGDC personnel between Camp site and drilling site	X		X	
5.	Rig move with associated accessories and all drilling materials between sites		X		X
6.	Preparation of rig foundations – wooden mats (Sub-base and pump area)		X		X
7.	Supply of electric light fixtures and bulbs	X		X	
8.	Fuel Supply (Diesel) (a) Fuel for rig	X		X	
	(b)Fuel for Cementing equipment (pumps compressors, rig trucks, lifting equipment etc)	X		X	
	(c) Fuel storage (day tank only)	X		X	
	(d) Main fuel storage facilities complete with pumps	X		X	
	(e) Fuel meter complete with totalizer		X		X
9.	Supply of Lubricants for rig and associated equipment	X		X	
10.	Supply of drilling mud, drilling fluid additives, LCM, foam detergent, and other drilling fluid materials	X		X	
11.	Supply of Mud Shed	X		X	
12.	Supply of cleaning Solvents	X		X	
13.	Supply of Soft rope, rags etc.	X		X	
14.	Repair of down hole tools damaged because of fishing.		X		X
15.	Rig maintenance		X		X
16.	Supply of all drill string components inclusive of consumables (Drill pipes, drill collars, subs, NRVs, reamers, stabilizers etc)	X		X	

17.	Drill pipe protectors	X		X	
18.	(a) Shale shaker screens	X		X	
	(b) Desander cones	X		X	
	(c) Desilter cones	X		X	
19.	Casing and tubing tools (Hydraulic tong, full circle casing spear, casing spider, elevator, and slips) for the ranges of casings specified in the Drilling Programme	X		X	
20.	(a) All Welding Jobs inclusive of equipment and consumables.		X		X
	(b) Specialist welding services (12¼" casing, CHF, etc.)		X		X
21.	Drilling Recorders	X		X	
22.	(a) Furnished roadway to location right-of-way, including rights of way for water lines, river crossing, highway crossings, gates and cattle guards.	X		X	
	(b) Bulk Material Storage yard.	X		X	
	(c)Maintain all roads for drilling operation.	X		X	
23.	Site preparation as per TGDC's layout.	X		X	
	Construction of cellar including materials.	X		X	
24.	Excavation for drilling water re-circulation ponds.	X		X	
25.	Communications facilities for Contractor's personnel		X		X
26.	Communications facilities for TGDC personnel	X		X	
27.	Clean up of: (a) Contractor's supplies and rubbish.		X		X
	(b) Sump, pits and site		X		X
28.	Supply of: (a) Casing, float collars, shoes, and centralisers	X		X	
	(b) Drill bits	X		X	
	(c)Casing thread compounds	X		X	
	(d)Casing landing joints	X		X	
29.	(a) 12¼" weld-on drilling casing head flange		X		X
	(b) 9⅝" casing head flanges welding		X		X
	(c)All (B.O.P.) equipment including drilling spools and reduction spools etc.	X		X	
	(d)Rotating head complete with drive bushings, stripper rubbers, spares etc.	X		X	
30.	(a) Supply of Portland Cement and cementing additives	X		X	
	(b)Transport of cement from factory to main site storage area.	X		X	
	(c) Cementing services as required by drilling programme issued by TGDC		X		X
31.	Permanent installation which will remain part of well i.e., CHF, adaptor spools, master and side valves and ring gaskets.		X		X
32.	Supply of water storage tank at drill sites	X		X	
33.	Supply of water supply pipe, pipe fittings and couplings (from source to rig site storage tank).	X		X	
34.	Installation and maintenance of rig water supply pipelines (from source to drill sites) at NB1, NZB3 and NB5 drilling site.	X		X	

35.	Pipe fittings for connection (including disconnection) from water tanks to drilling rig accessories at NB1, NZB3 and NB5 drilling site.		X		X
36.	Uplifting after well completion, of rig water supply pipelines (from source to drill sites) at NB1, NZB3 and NB5.	X		X	
37.	(a)Water supply header and reservoir	X		X	
	(b)Water pump (at the river specified for water intake)	X		X	
38.	Day to day operation and maintenance of water supply intake and pump stations	X		X	
39.	Supply of water pump and generator set	X		X	
40.	(a) Operation and day to day maintenance and service of water pumps, supply pipelines, header, and reservoir system.	X		X	
	(b)Repair and service of the water pumping system.	X		X	
41.	(a)Supply of Conventional coring equipment, i.e., basic tool.	X		X	
	(b)Supply of Conventional heads	X		X	
	(c)Replacement parts for coring equipment	X		X	
42.	Fishing tools (a)Standard fishing tools (Supplied with the rig)	X		X	
	(b)Special fishing tools and services	X		X	
43.	Rig trucks and loader(s) for rigging-up and rigging-down, loading and unloading		X		X
44.	Transportation of spares and maintenance parts for rig while drilling		X		X
45.	Miscellaneous trucking and handling of drilling materials.		X		X
46.	Adequate and safe housing, messing facilities and amenities for Contractor's while engaged on drilling/Completion, rigging-up and down, moving, unloading, and loading operations.		X		X
47.	Adequate and safe housing, messing facilities and amenities for TGDC personnel while engaged on drilling/Completion, rigging-up and down, moving, unloading, and loading operations.	X		X	
48.	Adequate office space for well-site personnel	X		X	
49.	Specialized drilling services, cementing services, aerated drilling services, running of casing and fishing services.		X		X
50.	Messing facilities and catering services for personnel sub-contracted by the Contractor while engaged in drilling operations at the rig camp.		X		X
51.	Repairs of tools rented by the Contractor		X		X
52.	Leave transportation – Contractor’s rig personnel to and from base and/or place of residence		X		X
53.	Additional roustabout labour and transport services to handle drilling supplies, materials, and equipment etc.		X		X
54.	Provision of insurance services and transportation services to move Contractor’s and its sub-contractor’s personal between base/rig site/base.		X		X
55.	Janitorial and cleaning services for all drilling sites	X		X	

56.	Adequate Safety Equipment for Contractor's personnel (protective gear etc.)		X		X
57.	Adequate Safety Equipment (fire safety equipment, H_2S detector etc.)	X		X	
58.	Detergent injection plunger pump for foam drilling	X		X	
59.	Submersible pump complete with stand for drilling returns (water) re-circulation.	X		X	
60.	Any other services or supplies necessary to complete the drilling programme, duly authorized by TGDC.		X		X

SCHEDULES

SCHEDULE A

RATES OF REMUNERATION

26 **SCHEDULE A- SUMMARY OF PRICES (FOR DRILLING OF 3 GEOTHERMAL SLIM WELLS)**

Currency: All price to be quoted should be in US Dollar.

ITEM	UNIT OF MEASURE	(A) UNIT COST	(B) MEASURED QUANTITY	(C) QUANTITY FOR 3 WELLS	(D) TOTAL COST EXCLUSIVE OF TAXES, DUTIES AND LEVIES [(A) x (B)]	(E) TOTALS FOR LOCAL TAXES, DUTIES AND LEVIES	(F) TOTAL COST INCLUSIVE OF TAXES, DUTIES AND LEVIES [(C) + (D)]
1. Mobilization and demobilization of Contractor's rig personnel to and from base and/or place of residence and while undertaking drilling operations.	lumpsum						
2. Drilling costs							
a. Working rate with crew.	day rate						
b. Standby with Crew	days						
c. Aerated drilling fluid operating rate	Meter						
d. Aerated drilling fluid stand-by rate	Hours						
3. Cementing Services for three (3) wells (Bidder to provide breakdown)	Well						
4.Fishing Services	Hours						
5. Training Services	Lumpsum						
6.Insurance for Contractors Personnel	lumpsum						
7.Rig demobilization	lumpsum						
GRAND TOTAL							

SCHEDULE B

(Contractor's Personnel Requirements)

Crew - Shifts		A (day)	B (night)	C (day)	D (night)	
Drilling supervisor	2	1		1		Dayshift + on call at night
Mechanic	2	1		1		Dayshift + on call at night
Mud logging expert	2	1		1		
Driller	4	1	1	1	1	
Assistant driller	4	1	1	1	1	
Roughneck	6	3	3	3	3	
Cementing Specialist	1					On call when cementing required
Safety Officer	1	1		1		
Total crew	22					

*** Six (6) Roughnecks will be provided by TGDC to make total of 12.**

B.1 REQUIRED CREW DESCRIPTION

B.1.1 DRILLING SUPERVISOR

QUALIFICATIONS/REQUIREMENTS

- Holder of Bachelor degree or Advanced Diploma in Mechanics/Electro mechanics.
- Safety, communication & supervisory skills and experience.
- Proficient in computers, confident with Microsoft office: Word, Excel, Access, Power point etc.
- Experience with coring and air-hammer drilling shall be an added advantage.
- Fluent in the English and Swahili language.

JOB DESCRIPTION/RESPONSIBILITIES

- Onsite management of drilling operations
- Health & Safety guidance to the rig crew
- Maintaining records of all operations at the rig site
- Follow up with maintenance for servicing of the rig
- Keeps inventory of all tools & Equipment at the rig
- Assist the driller to drill
- Treat all team members with respect, fairness and professionalism
- Reports to the drilling engineer

B.1.2 MUD LOGGING EXPERT

QUALIFICATIONS/REQUIREMENTS

- Minimum qualification for the Onsite Geological Expert is a university degree in geology
- At least 4 years of experience in borehole geology.

JOB DESCRIPTION/RESPONSIBILITIES

- Analysing the drill cuttings and/or cores.
  - determine the formations intersected (identify lithological units)
  - Evaluate formation alteration, to estimate rock temperatures, fluid pressures and stability of the formations.
  - Identify feed points and their relation to geology
- On site geological consulting and hands-on training of TGDC borehole geologist.
- Drilling data collection (penetration rates, pump rate and pressure, circulation losses, temperature of drilling mud, etc).
- Temperature measurements during the first two stages of the drilling using small temperature memory tool, such as HOBO.
- Write daily reports, containing an overview of drilling activities and formations penetrated the last 24 hours, the drilling data and preliminary results.
- Collect in a general (final) report, information on the progress of the drilling of the well and the geological and geothermal data collected during the drilling with preliminary interpretation of the data.
- Responsible for fluids used during well control.

B.1.3 DRILLER

QUALIFICATIONS/REQUIREMENTS

- Minimum of 5 years of experience on drilling rigs. Thereof, minimum 3 years as a Driller.
- Safety, communication & supervisory skills, and experience.
- Experience in slim well drilling is an added advantage
- Experience in coring
- Proficient in computers, confident with Microsoft office: Word, Excel, Access, Power point etc.
- Must have a valid Well Control Supervisor level certificate.
- Top drive experience. Experience with coring and air-hammer drilling.
- Fluent in the English language.

JOB DESCRIPTION/RESPONSIBILITIES

- Receive instructions, in accordance with the drilling program, for drilling parameters (weight on bit, rotary table rpm, pressures, and pump outputs) as well as other work procedures (type and expected life of bit, mud characteristics, well control etc.) and ensure their correct application. Whenever deemed necessary, within the specified limits, change the drilling parameters to improve the drilling progress, in co-operation with the drilling supervisor.

- Receive handover for the previous shift and verify the status of operations and equipment before beginning of shift.

- Check and set up the equipment necessary for the assigned shift, i.e., drill pipes and another tubular material, x-over, etc.

- Operate the rig during drilling activities.

- Assist rig down/rig up operations by coordinating and controlling.

- Prepare daily reports on drilling progress, drilling parameters, drilling incidents, decision making, equipment used, material used and cost. Format to be decided but may be like RimDrill.

- Ensure that all reporting routines are followed, and that all equipment related paperwork are carried out within area of responsibility.

- Ensure that all orders and instructions received verbally or in writing are fully understood and adhered to.

- Be safety conscious in all work and use personal protective equipment.

- Responsible for safe working conditions on the rig always.

- Ensure usage of crew's personal protective equipment.

- Be familiar with all relevant work and safety procedures issued by Company and Operator.

- Apply and ensure the correct application of safety standards and regulations and take part in emergency drills and safety meetings.

- Issue Safe Job Analysis before start-up of non-routine operation or job and ensure completion of risk assessments where required.

- Instruct all personnel assigned to assist the driller of their duties and responsibilities and of any special safety precaution to be taken prior to start-up of any work.

- Carry out BOP and safety drill etc. in accordance with regulations laid down by Government Authorities or Operating Company.

- Report all accidents, near-miss accidents, and non-conformance through the proper channels.

- Ensure that good housekeeping is maintained on the drill floor.

B.1.4 ASSISTANT DRILLER

QUALIFICATIONS/REQUIREMENTS

- 3 years of experience on drilling rigs at minimum.
- Safety, communication & supervisory skills.
- Proficient in computers, confident with Microsoft office: Word, Excel, Access, Power point etc.
- Experience in slim well drilling is an added advantage
- Experience in coring.
- Top drive experience. Experience with coring and air-hammer drilling.
- Fluent in the English language.

JOB DESCRIPTION/RESPONSIBILITIES

- Receive instructions for drilling parameters.
- Receive handover for the previous shift and verify the status of operations and equipment before beginning of shift.

- Check and set up the equipment necessary for the assigned shift, i.e., drill pipes and other tubular material, x-over, etc.

- Operate the rig during drilling activities.

- Assist rig down/rig up operations by coordinating and controlling.

- Assist Driller and assure that reporting routines are followed, and that all equipment related paperwork is carried out within area of responsibility.

- Ensure that all orders and instructions received verbally or in writing are fully understood and adhered to.
- Be safety conscious in all work and use personal protective equipment.

- Responsible for safe working conditions on the rig always.

- Assist Driller to ensure that crew uses personal protective equipment.

- Be familiar with all relevant work and safety procedures issued by Company and Operator.

- Take part in emergency drills and safety meetings.

- Issue Safe Job Analysis before start-up of non-routine operation or job and ensure completion of risk assessments where required.

- Instruct all personnel assigned to assist the assistant driller of their duties and responsibilities and of any special safety precaution to be taken prior to start-up of any work.

- Report all accidents, near-miss accidents, and non-conformance through proper channels.

- Ensure that good housekeeping is maintained on the drill floor.

B.1.5 DRILLING RIG MECHANIC

QUALIFICATIONS/REQUIREMENTS

- 4 years at minimum of experience on a drilling rig.
- Holding a degree/diploma in Mechanics.
- Safety, communication & supervisory skills.
- Proficient in working with computers.
- Top drive experience. Experience in maintenance of coring and air-hammer equipment.
- Fluent in English speaking language.

JOB DESCRIPTION/RESPONSIBILITIES

- Shall perform preventive, routine, and non-routine maintenance and for the repair of engines, pumps, compressors and drilling related equipment of the rig.
- Ensure that all reporting routines are followed, and that all equipment related paperwork are carried out within the area of responsibility, such as maintenance records, updating of service and instruction manuals, instructing procedures, etc. Be familiar with maintenance systems on rigs.
- Keep the stock of spare parts and consumables at the appropriate level. By verifying the stock levels and reporting to superiors the deficiencies taking in consideration future maintenance requirements and delivery time.

- Supervise the disassembly, loading, unloading and assembly of the drilling equipment during rig moves.
- Be familiar with all classification society and authorities' rules and regulations applicable to area of responsibility.
- Be safety conscious in all work and use personal protective equipment.
- Be familiar with all applicable work and safety procedures.
- Ensure that before any maintenance activity is started, precautions have been taken and the "work permit" has been signed.
- Promptly report all accidents, near-miss accidents, non-conformances, and safety hazards to superior.
- Participate in safety meetings and safety drills held.
- Ensure good housekeeping in the working areas.

B.1.6 ROUGHNECK

JOB DESCRIPTION/RESPONSIBILITIES

- Receive instructions from Driller and Assistant Driller.
- Receive handover for the previous shift and verify the status of operations and equipment before beginning of shift.
- Assist in setting up the equipment necessary for the assigned shift, i.e., drill pipes and other tubular material, x-over, etc.
- Assist with rig down/rig up operations.
- Ensure that all orders and instructions received verbally or in writing are fully understood and adhered to.
- Be safety conscious in all work and use personal protective equipment.
- Responsible for safe working conditions on the rig always.
- Be familiar with all relevant work and safety procedures issued by Company and Operator.
- Take part in emergency drills and safety meetings.
- Report all accidents, near-miss accidents, and non-conformance through the proper channels.
- Ensure that good housekeeping is maintained on the drill floor.

QUALIFICATIONS/REQUIREMENTS

- 2 years of experience on drilling rigs or from related industry at minimum
- A degree/diploma within a technical field. Such as car mechanic, electrician, joiner
- Safety and communication skills.
- Capable in the English language.

B.1.7 SAFETY OFFICER

JOB DESCRIPTION/RESPONSIBILITIES

- Plan and implement OHS policies and programs
- Conducting risk assessment in drilling environment and enforcing preventative measures
- Conduct inductions for all employees involved in the drilling rig as well as visitors
- Identify Advise and lead employees on various safety-related topics
- Prepare educational seminars and webinars on a regular basis
- Advising and instructing on various safety-related topics (noise levels, use of machinery etc.)
- Process bottlenecks and offer timely solutions
- Check if all the employees are acting in adherence with rules and regulations
- Prepare and present reports on accidents and violations and determine causes

QUALIFICATIONS/REQUIREMENTS

- Holder of bachelor's degree in Environment Management, environmental engineering, public health or any other related fields

- Minimum of 5 years as a safety officer. At least 2 years should be in geothermal industry or in oil and gas industry
- Excellent knowledge of safety legislations and procedures in geothermal environment
- Excellent knowledge of potentially hazardous materials or practices
- Familiarity with conducting data analysis and reporting statistics
- Proficient in MS Office
- Working knowledge of safety management information system

SCHEDULE C

TECHNICAL DATA FOR TGDC DRILLING RIG

TECHNICAL DATA FOR KMD30/3000 RIG		
ITEM	**DESCRIPTION**	**SPECIFICATION**
1	**RIG CKECK LIST**	
1.1	RIG IDENTIFICATION	KMD30/3000 Multi-Purpose Water Well & Core Drilling Rig
	COUNTRY OF MANUFACTURER	P.R.C.
	TRAVEL WAY	Pedrail mode
	DRILLING DEPTHS	
	BQ（φ55.5mm）	3000m
	NQ（φ71mm）	2600m
	HQ（φ89mm）	2200m
	PQ（φ114mm）	1500m
1.1.1	**CAPACITY FOR HANDLING DRILL PIPE OR CASING RATING**	
	RIG HOOK-LOAD CAPACITY, FOR DRILL STRINGS	30t
	RIG HOOK-LOAD CAPACITY, RUNNING CASING	30t
1.1.2	**MAST**	
	NOMINAL CAPACITY	60t
	HEIGTH	12.4m
	WORK ANGLE	90°
	FEED STROKE	7.5m
	MAST RAISING	Hydraulic
1.1.3	**TOP DRIVE**	
	TOP DRIVE 1	
	ROTATION	0 – 70 rpm
	MAXIMUM TORQUE	8000Nm / 5900Ft lbl
	TOP DRIVE 2	
	ROTATION	0 – 1200 rpm
	MAXIMUM TORQUE	600Nm / 440Ft lbl
	WIRELINE WINCH	Wireline winch with depth counter (wireline length) 2500m Wireline diameter 6mm Wireline speed 1-350 m/min
1.1.4	**WORKING PLATFORM**	
	CLEAR HEIGHT	1m
1.1.5	**HHYDRAULIC TONG**	
	FOR HIGER GEAR	3600Nm / 2700ft.lb
	FOR LOWER GEAR	34000Mn / 25,000ft.lb
1.1.6	**FLOOR LENGTH**	
	HEIGHT ABOVE GROUND	1m
	YEAR OF MANUFACTURE	2021
1.1.7	**ELECTRICAL POWER UNITS**	
	GENERATORS	
	QUANTITY	1
	MANUFACTURER	Shandong Kerui Petroleum & Gas Equipment Co., Ltd
	YEAR OF MANUFACTURE	2021

	MAX. CONTINUOUS OUTPUT kW	Output rating: 200
	ENGINE MODEL	Cummins 6LTAA8.9-G2
	ALTERNATOR	
	MODEL:	Stamford, UCDI 274K
	POWER(KVA/KW):	250/200
	RATED SPEED:	1500 rpm
	EXCITING MODE:	Brushless, self-exciting
1.1.8	**PUMPING EQUIPMENT**	
	ZTF240 MUD PUMP	
	ENGINE MODE	Cummins 6CTA8.3-C240-11
	POWER:	240hp
	TRANSMISSION BOX:	6DS180T
	TYPE:	six cylinders
	DISCHARGE CAPACITY:	8.3L
	BRAND:	Binzuan
	MODEL:	ZTF240
	SUMP PUMP	2 x Sump pump for tank or mud pit, 4 m lift. 15 L/s electrical driven.
1.1.9	**MUD TANKS AND MUD CLEANING EQUIPMENT**	
	10M³ DRILLING WATER TANK	Drilling water tank, incoming from water source. Inflatable. 10 m3. (2 items).
	WATER TANK	Open top water tank with drain / clean-out valve. Volume capacity 4 m3 (2 items).
	HOPPER TANK	Hopper tank (mud mixing) with oversized agitator for cement batch mixing. Hooklift (DIN 39722) skid mounted together with pumps and piping. 4m3
	MUD SUCTION TANK	Mud suction tank with oversized agitator for cement batch mixing. Hooklift skid (DIN 39722) mounted together with pumps and piping. 4m3
	SHALE SHAKER	Shale shaker (Power：1.72*2 vibration：>6.5G handling capacity：120m³/h) and desilter cyclones mounted on a hooklift skid (DIN 39722) together with transfer pumps and piping. Volume capacity 1 m3
	DESILTER	
	SHAKER TANK	
	MUD MIXING HOPPER	Centrifugal pump:4×3×13; Motor power:20hp Discharge capacity:18m 3 /h; Working pressure:0.25~0.45MPa; Inlet diameter:4"; Outlet diameter:3"; Including hopper Mixing speed; ≤80kg/min
	MUD TRANSFER PUMPS	Mud transfer pumps -1 Centrifugal pump:4×3×13; Motor power:30hp Working pressure:0.25~0.45MPa; Mud transfer pumps -2 Macro axis Submerged Pump Motor power:4kW
1.2.0	**CEMENTING EQUIPMENT**	
	CEMENT JET MIXER	Cement jet-mixer to make cement slurry before batch mixing in the mud tanks. Cutting board for bagged cement. Flow capacity 5 L/s

	DOUBLE PLUG CEMENTING HEAD 2M	Double plug cementing head 2 M for 9 5/8" BTC casing, including valves	
	DOUBLE PLUG CEMENTING HEAD 2M	Double plug cementing head 2 M for 7" BTC casing, including valves	
	DOUBLE PLUG CEMENTING HEAD 2M	Double plug cementing head 2 M for 4 1/2" BTC casing, including valves	
	SIMPLE CEMENTING HEAD	Simple cementing head for DTH drill pipes 114 mm API 3 ½" Reg. including valves	
	SIMPLE CEMENTING HEAD	Simple cementing head for coring rods HRQ (with RQ threads), including valves	
	SIMPLE CEMENTING HEAD	Simple cementing head for coring rods NRQ (with RQ threads), including valves	
1.2.1	**DRILL PIPES**		
	DTH DRILL PIPES	DTH drill pipes. Diameter 114 mm (4 ½") Length 6 m, tool joint API 3 ½" Reg. Wall thickness 6,3 mm, spanner/wrench flats.	900m
	HRQ CORING RODS	HRQ coring rods (3m long). Rod min torque rating 3000 Nm (2200 ft.lb)	2200m
	NRQ CORING RODS	NRQ coring rods (3m long). Rod min torque rating 3500 Nm (2600 ft.lb)	2600m
1.2.2	**BOTTOM HOLE ASSEMBLY (BHA)**		
	12 ¼ "BIT STABILIZER	12 ¼ "bit stabilizer, box-box thread 6 5/8"REG with one-way valve by bit	2pcs
	8"COLLAR	8"collar 6m, pin-box thread 6 5/8"	10pcs
	12 ¼ "STABILIZER	12 ¼ "stabilizer pin-box thread 6 5/8"	2pcs
	X-OVER PIN-BOX 6 5/8"(PIN) REG. TO NC46 (BOX)	X-over pin-box 6 5/8"(pin) Reg to NC46 (box)	2pcs
	8 ½ "BIT STABILIZER	8 ½ "bit stabilizer box-box thread 4 ½ "REG Í NC46 with one-way valve by bit	2pcs
	8 ½ "STABILIZER	8 ½ "stabilizer pin-box thread NC46	2pcs
	6 1/8"BIT STABILIZER	6 1/8"bit stabilizer box-box thread 3 ½ "REG í NC31 (2 7/8"IF) with one-way valve by bit	2pcs
	4 ½ "COLLAR	4 ½ "collar 6m, pin-box thread NC31 (2 7/8"IF)	2pcs
	6 1/8"STABILIZER	6 1/8"stabilizer pin-box thread NC31 (2 7/8"IF)	18pcs
	X-OVER TO 3 ½ "(76MM) DRILL PIPE	X-over to 3 ½ "(76mm) drill pipe	2pcs
1.2.3	**CORE BARRELS**		
	HQ CORE BARRELS ASSEMBLY	Wireline core barrels for HRQ coring	2pcs
	NQ CORE BARRELS ASSEMBLY	Wireline core barrels NRQ coring	2pcs
	HQ AND NQ CORE BARREL SPARE PART KIT.	HQ and NQ core Barrel Spare part kit.	2pcs
	HQ AND NQ OVERSHOT EASY LOCK FOR RETRIEVING WIRELINE BARREL	HQ and NQ overshot Easy lock for retrieving wireline barrel	2pcs
1.2.4	**DTH AIR HAMMERS**		
	AIR HAMMER FOR DRILLING WITH 8 1/4" AND 12" BITS	80 type air hammers for drilling with 7.8" to 12" bits, Using 8 1/4" and 12" bits	2pcs
	AIR HAMMER FOR DRILLING WITH A 6" BIT	50 air hammers for drilling with 5 1/4" - 6" bits, Using 6" bit	2pcs

	SURFACTANT PUMP (DILUTED DRILLING SOAP) WITH TANK	Surfactant pump (diluted drilling soap) with a pump tank, skid mounted. Flow 0.2-0.5 L/s. pressure 40 bar.	1pcs
	OIL LUBRICATOR	Lubricator for DTH air hammer, with oil tank, skid mounted. Adjustable oil flow 0.5-3 L/h, pressure 40 bar.	
1.2.5	**FURNISHED CONTAINERS, POWER, GENERATOR AND LIGHTS**		
	CANTEEN ROOM	Max size:6055*2435*2325 2.The canteen is fitted with a side steel door and windows with barriers. The Container needs to be insulated. On the outside is an electric 3 phase 400V, 32A male connection. The inside has 220V sockets and lights with a light switch by the door. In the end of the container where the entrance is a kitchen interior with a sink where water can be connected from the outside and with a drain and 220V sockets. 2 dining tables 2m x 0.6m and 12 chairs. Heating ventilation and air-conditioning (HVAC) in container	1pcs
	OFFICE ROOM	The office is fitted with a side steel door and windows with barriers. The Container needs to be insulated. A stainless-steel sink with faucets and a drain is required for washing of cutting samples. Worktables for two persons and shelves. On the outside is an electric 3 phase 400V, 32A male connection. The inside has 220V sockets (10 sockets for PC and chargers) and lights with a light switch by the door. Heating ventilation and air-conditioning (HVAC) in container.1、Powerful laptop Computers with Docking Station Two (2) Sets2、Laser Jet color Printer with Scanner and Copier one (1) piece with the following specifications3、Wireless Internet Modem one (1) Set4、Office Chairs with wheels 6pcs5、Fixed Wooden Tables With Drawers 3pcs6、Steel cabinets：2pcs7、LCD Screens with wall brackets:4pcs8、Note pads 2pcs9、 Max size:6055*2435*2325	1pcs
	WORKSHOP ROOM	The workshop is fitted with a side steel door and windows with barriers. The original container door will stay as it is. The Container needs to be insulated. On the outside is an electric 3 phase 400V, 63A male connection. The inside has 220V sockets and lights with a light switch by the door. The work bench is made of steel and has a 10 mm thick steel plate on top with shelves under the plate for storage 4x 220v sockets and 16A, 32A 3 phase sockets be fitted over the workbench. In the other end is a storage area with shelf's 2mx 2.5m. Shelf's will be around the area except where the entrance is. Heating ventilation and air-conditioning (HVAC) in container.	1pcs

		Max size:6055*2435*2325	
	CHANGING ROOM AND SANITARY FACILITIES (WC) ROOM	The changing room and sanitary facilities are two separate rooms and each room needs to be fitted with a steel door and windows with barriers. The Container needs to be insulated. On the outside is an electric 3 phase 400V, 32A male connection. The inside has 220V sockets and lights with a light switch by the door 2m are fitted with a sanitary tank fitted with a toilet. On the outside needs to be a 3" suction hatch for suction. The Changing room is total 4m. The inside has 220V sockets and lights with a light switch by the door. The locker room needs to have 15-20 lookers Heating ventilation and air-conditioning (HVAC) in locker room	1pcs
	WELL SITE EX-PROOF CIRCUIT AND LIGHTING	According to API standard (RP 505). Rated voltage: 400/230V (3 phase four-wire system); Rated frequency: 50HZ; Explosive-proof grade: available to use dⅡBT4 area; Complete earthing system All connectors and cable, lamps are made in China	1 set
	LIGHT TOWERS	Light towers LED modules 4 x 230 W	4pcs
	DUSTBIN	Containers to store sorted waste, 3 m. Containers to store sorted waste, 3 m. Hook lift (DIN 39722).	3pcs
1.2.6	**ACCESSORIES**		
	3M³ DIESEL FUEL TANK	Diesel fuel tank, double walled, 3 m3 (steel) with level indicator, 10 m filling hose.	1pcs
	DRILL STRING AND CASING HANDLING TOOLS, TONGS, SLIPS, ELEVATORS	Drill string and casing handling tools, tongs, slips, elevators	1pcs
		Elevator link	1pcs
		Raiser	1pcs
		Cross over	2pcs
		Safety clamp	1pcs
		Pad fork	2pcs
		Manual pipe tong	3pcs
		Water swivel	2pcs
		Tool holder for HQ/NQ	1pcs
		Reducing joint	2ea
	HIGH-PRESSURE HOSES	All high-pressure hoses for connecting drill rig equipment with quick connections and hammer union on mud lines, kill lines and cement hoses.	1set
	RIG INSTRUMENTATION SYSTEM/DATA LOGGING SYSTEM	The rig has all requirements of Rig instrumentation system/Data logging system.	1set
	GAS MONITORING SYSTEM	Gas alarms on rig floor, shale shaker and mud tank. 1、Central monitoring station：1set 2、Portable sensors ：10pcs ATEX Certificated The minimum monitoring on site is H2S, CO, CO2 and O2 Portable monitoring sensors will be able to monitor H2S, CO, CO2 and O2	3pcs

		The monitoring system will be able to communicate wireless with the portable sensors. The range of wireless communication:0-100m	
	PERSONAL SAFETY EQUIPMENT	The drilling service contractor shall be responsible to provide all relevant PPEs to her staff	
	FIRE EXTINGUISHER		
	EYE WASH STATION		
	FIRST AID KIT		
1.2.7	**SPECIAL TOOLS**	Special tools for maintenance, pulling pump liners and valves etc. Included in the device's random tools.	1pcs
1.2.8	**WORKSHOP TOOLS FOR MAINTENANCE**	Assortment of workshop tools shall be available with the rig	Sets
1.2.9	**OPERATING SPARES FOR ONE YEAR OF OPERATION**	Assortment of recommended operating spare parts shall be available with the rig	Sets
1.3.0	**FISHING TOOLS**		
	4 1/2"OVERSHOT	Overshot with spiral grapples for 114 mm DTH drill pipes, outside flush	1ea
	4 1/2", 6 1/2" AND 8 " DRILL COLLARS OVERSHOT	Overshot with spiral grapples for 4 1/2", 6 1/2" and 8 " drill collars	1ea
	TAPER TAP FISHING SPEAR	Taper tap fishing spear for HQ drill rods (ID 77.8 mm)	1ea
	TAPER TAP FISHING SPEAR	Taper tap fishing spear for NQ drill rods (ID 60.3 mm)	1ea
	WHIPSTOCK	Whipstock for sidetracking HQ drill rods	1ea
	FISHING MAGNET	Fishing magnet 6" with 3 1/2" Reg. pin	1ea
	MILLING TOOL	Milling tool 6" with 3 1/2" Reg. pin	1ea
1.3.1	**SCREW AIR COMPRESSORS**		
	DIESEL POWER		
	MODE:	Yuchai, YC6K560-KT31	
	POWER:	412kW	
	TYPE:	six cylinders	
	DISCHARGE CAPACITY:	13L	
1.3.2	**COMPRESSOR:**		
	MODEL:	Liugong, CSH1300A-V25/34DB	
	EXHAUST PRESSURE:	21-35bar	
	FLOW:	36-32m³/min	
1.3.3	**RIG SUPPORTING VEHICLES**		
	TRACK CARRIER	Rubber track Carrier, carrying load 11 ton, with hooklift (DIN 39722) for loading containers (diesel). The Hooklift crane mounted on the back has the standard DIN 39722. For carrying different heavy equipment from one road category to another of moving them between well pads	
		Hook lift load carrying platforms (flatrack). 6 m	
	TELESCOPIC FORKLIFT TRUCK	Telescopic forklift truck. 4 x 4. 6 t lifting capacity (diesel)	
1.3.4	**HOISTING EQUIPMENT**		
	HYDRAULIC CRANE MOUNTED ON TOP OF MAST.	Rated for 3t, reach to 1.5 m, wireless controls	
1.3.5	**BLOW OUT PREVENTER (BOP)**		

	STACK 1:	Rotating head API 13 5/8" x 3M, with API 6B 7 1/16" x 3M flanged outlet for flow line. Seal for drill pipes OD 3 ½" and 4 ½"
	STACK 2:	Drilling Spool 11" x 3M (Height 0.5 m) with two ANSI 2" x 900 flanged outlets, Annular Preventer 11" x 3M, x-over spool 11" x 3M to 13 5/8" x 3M (height 0.35 m), Rotating head (from stack 1). Seal for drill pipes OD 3 ½" and 4 ½".
	STACK 3:	Drilling Spool 7 1/16" x 3M with two ANSI 2" x 900 flanged outlets, Double ram 7 1/16" x 3M, Annular Preventer 7 1/16" x 3M and Rotating head API 7 1/16" x 3M, with high temperature rubbers. The pipe ram gate segments (one for each DP size) and all sealing rubbers are for drill pipe diameters 4 ½" (114 mm), 3 ½" (88.9 mm) and 2 ¾" (69.9 mm). The BOP rubbers shall be rated for high temperature (to tolerate 150-160°C).
	REMOTE OPERATION DEVICE	Accumulator for Blow Out Preventers (BOP) with 3" outlets. For remote operation and at the accumulator.
	VALVE	All metal ANSI 2" x 900 gate valves for kill and choke lines, geothermal trim
	WIRELINE BOP	Wireline BOP (6 mm) for HRQ and NRQ coring rods.
	LUBRICATOR	"Lubricator", 5 m long pipe and a seal on top for wireline, with threads for coring rods HRQ and NRQ
	"KELLY COCK" VALVE	"Kelly cock" valve, threaded API 2 7/8" IF
	FLANGE API 6B 7 1/16" X 3M	Flange API 6B 7 1/16" x 3M, with 180 mm bore size

The drilling rig drawing id attached for as drawing XDL-3000.01.02 KMD30-3000 Multi-Purpose Water Well and Core Drilling Rig-final

SCHEDULE D

KEY DURATIONS

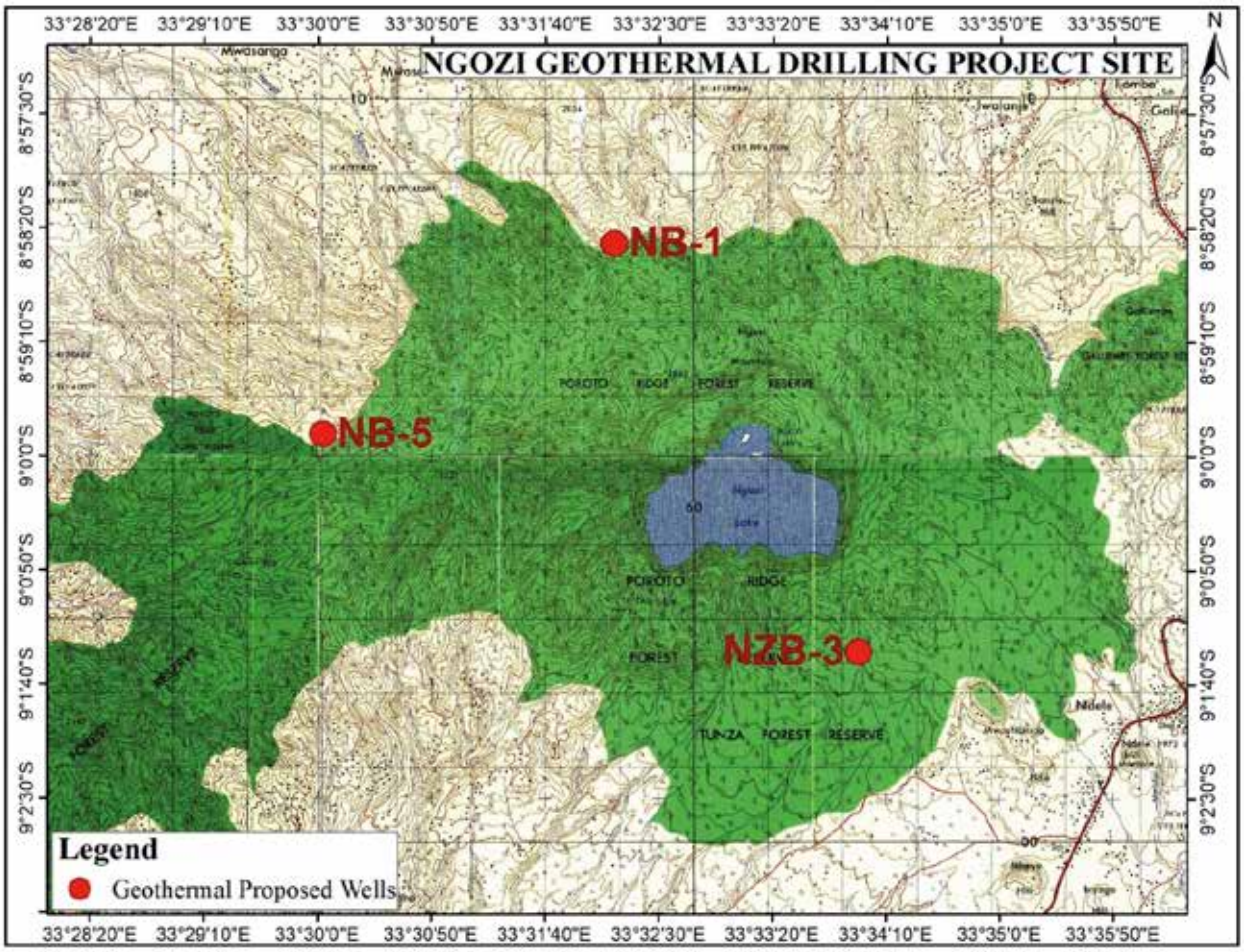
ITEM	DESCRIPTION	KEY DURATION FOR THREE WELLS (DAYS)
D1	Mobilization of drilling personnel from signing of Drilling Services Contract for Ngozi Geothermal Prospect ready to commence drilling of first well.	14
D2	Estimated duration to drill three 1500 m Geothermal slim well, set casing and carry out well head installation: -	180
D3	At completion of well drilling, rig down, ready to move to next well, rig –up, ready to commence drilling -Location to Location	12
	TOTAL DURATION	**206**

APPENDICES

APPENDIX 1: NGOZI GEOTHERMAL PROSPECT EXPECTED SLIM WELLS RECORDS

Well No.	NB1	NZB3	NB5
Area	NGOZI	NGOZI	NGOZI
Field	GEOTHERMAL PROSPECT	GEOTHERMAL PROSPECT	GEOTHERMAL PROSPECT
Location ARC1960 UTM	E; 559007.367	E; 562262.695	E; 555121.333
	N; 9007816.538	N; 9002639.24	N; 9005213.887
Elevation	2322 m.a.s.l	2043 m.a.s.l	2088 m.a.s.l
Depth to be Drilled	1200m	1200m	1500m
Spud in date	4th December, 2022	1st September,2022	07th February, 2023
Completion Date	03rd February, 2023	30th November,2022	06th April, 2023
Total Drilling Period (Days)	60	60	60
EXPECTED DRILLED DEPTHS			
9⅝" OD Surface hole casing depth	100 m.	100 m.	100 m.
7" OD Intermediate hole casing shoe depth	200 m.	200 m.	200 m.
4 ½" OD Production casing shoe depth	400 m	400 m	400 m
HQ OD main hole perforated liners	400 m	800 m	800 m
Drilled Depth (m)	1200m	1200m	1500m

APPENDIX 2. NGOZI DRILLING SITE MAP



PART 3 – CONTRACT CONDITIONS AND CONTRACT FORMS

SECTION VIII: GENERAL CONDITIONS OF CONTRACT

General Conditions of Contract to be used for this Tender shall be the Conditions of Contract for the Standard Tender Document for Procurement of Medium and Large Works under International and National Competitive Methods prepared by the Public Procurement Regulatory Authority available on PPRA's Website www.ppra.go.tz.

SECTION IX : SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC. Except where otherwise indicated, all special Conditions of Contract should be filled in by the Employer prior to issuance of the Tendering Documents. Schedules and reports to be provided by Employer should be annexed.

SCC No.	Conditions	GCC Sub-Clause	Data
1.	Employer's name and address	1.1.2.	**Tanzania Geothermal Development Company Limited, Ursino Estate, Mwai Kibaki Road, House number 25, Plot number 13, P.O. Box 14801, Dar es Salaam, Tanzania.**
2	Project Manager's name and address	1.1.2	**John Joseph Lubuva,** **Tanzania Geothermal Development Company Limited, Ursino Estate, Mwai Kibaki Road, House number 25, Plot number 13, P.O. Box 14801, Dar es Salaam, Tanzania. +255 756. 175 183 john.lubuva@tanesco.co.tz**
3	Time for Completion	1.1.3	**206 days**
4.	Defects Notification Period	1.1.3	**12 months after completion of a well per well.**
5.	Sections	1.1.5	**Not Applicable.**
6.	Governing Law	1.4.1	**Law of Tanzania.**
7.	Ruling language	1.4.2	**English**
8.	Language for communications	1.4.3	**English**
9.	Conditions Precedent	1.7.1	Conditions Precedent to Contract Effectiveness • **Submission of acceptable Advance Payment Guarantee;** • **Payment of Advance Amount; and** • **Site handing over.**
10.	Compliance with the Laws	1.14.1	**No exception.**
11.	Time for access to the Site	2.1.1	The Site Possession Date shall be **discussed and agreed during Contract Negotiation.**
12.	Project Manager's Duties and Authority	3.1.3	The Project Manager Shall Obtain Employers approval to exercise authority on the following; **i. Communicate with the media;**

SCC No.	Conditions	GCC Sub-Clause	Data
			ii. Leave site; and **iii. Engage in other activities other than those stipulated in the appointment letter/contract.**
		3.1.6(b)(ii)	**All variations resulting in an increase of the Accepted Contract Amount shall require approval of the Employer.**
13.	Contractor's General Obligations	4.1.8	The Contractor shall be responsible for his design work as specified in the contract, except for the following; **Not Applicable.**
14.	Performance Security	4.2.1	The performance security will be in the form of **unconditional Bank Guarantee** in the amount(s) of **8 % of the Accepted Contract Amount** and in the same currency(ies) of the Accepted Contract Amount. The Employer will authenticate the security from the issuing Bank. In case of Foreign bidder Advance Payment security should be confirmed by reputable local Bank, the local Bank should be able to cash (forfeit) the security amount upon demand by the Procuring Entity.
		4.2.2	Other form of Performance Security…….. **Not Applicable.**
15.	Subcontractors	4.4.2	Responsibility for the acts of subcontractors shall be borne by the Contractor except for the following acts **No exceptions.**
16.	Responsibility for Transport of Goods	4.16.1	The Contractor shall be responsible for transport of goods except for the following: **No exception.**
17.	Progress Reports	4.21.1	The Contractor shall submit monthly reports to the Project Manager except under following circumstances **No exception.**
18.	Security of the Site	4.22.1	**Responsibility of the Site Shall be vested to the Employer.**
19.	Normal working hours	6.5.1	**12 hours per shift.**
20.	Commencement of Works	8.1.1	**As stated Sub clause 8.1.1**
21.	Delay damages for the Works	8.7.1& 14.15.1(b)	**0.20 % of the Contract Price per day.**
22.	Maximum amount of delay damages	8.7.1	**10 % of the final Contract Price.**
23.	Provisional Sums	13.5.1. (b)(ii)	**Not Applicable.**
24.	Adjustments for Changes in Cost	13.8.1	**Not Applicable.**
	The Contract Price	14.1.1	**Not Applicable.**

SCC No.	Conditions	GCC Sub-Clause	Data
25.	Total advance payment	14.2.1	**15 %** of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable. The Advance Amount will be paid **once**. The Advance Payment is subjected to the submission of unconditional Advance Payment Bank Guarantee (Please see Section X: Contract Forms). The Employer will authenticate the security from the issuing Bank. In case of Foreign bidder Advance Payment security shall be confirmed by reputable local Bank, the local Bank should be able to cash (forfeit) the security amount upon demand by the Procuring Entity.
26.	Repayment of advance payment	14.2.5	**As shown in GCC Clause 14.2.5**
27.	Percentage of Retention	14.3.2	**10 %** of Interim Payment Certificate.
28.	Limit of Retention Money	14.3.2	**5 %** of the Accepted Contract Amount.
29.	Plant and Materials	14.5.2(b)(i)	**Not Applicable.**
		14.5.2(c)(i)	**Not Applicable.**
30.	Minimum Amount of Interim Payment Certificates	14.6.2	**30 % of the Accepted Contract Amount.**
31.	Maximum total liability of the Contractor to the Employer	17.6.2	The product of **2 times** the Accepted Contract Amount.
32.	Periods for submission of insurance:	18.1.6	**14 days**
	a. evidence of insurance.		**14 days**
	b. relevant policies		**14 days**
33.	Maximum number of deductibles for insurance of the Employer's risks	18.2.4(d)	**Shall be in accordance with the applicable law in Tanzania.**
34.	Minimum amount of third party Insurance	18.3.2	**Shall be in accordance with the applicable law in Tanzania.**
		18.3.3	**No exception to the provisions of GCC 18.3.3.**
35.	Date by which the DARB shall be appointed	20.2.1	**28 days after the Commencement date.**

SCC No.	Conditions	GCC Sub-Clause	Data
36.	The DARB shall be comprised of	20.2.2	**Three Members.**
37.	List of proposed members of DARB	20.2.2	**Will be proposed during Contract Negotiation.**
38.	Appointment (if not agreed) to be made by	20.3.1	**Tanzania Institute of Arbitration (TIArb).**
39.	Rules of arbitration	20.6	**In accordance with the laws of Tanzania.**

SECTION X. CONTRACT FORMS

This Section contains forms which, once completed and submitted, will form part of the Contract. The forms for Performance Security or Securing Declaration shall be completed and submitted by the successful Tenderer before signing of the contract, and when advance payment is required, Advance Payment Security shall be completed and submitted after contract signature. The Section also contains the Letter of Intention to Award the Contract, which shall not form part of the contract.

The Contract Forms to be used for this Tender shall be those contained in Section X: Contract Forms of the Standard Tender Document for Procurement of Medium and Large Works under International and National Competitive Methods prepared by the Public Procurement Regulatory Authority available on PPRA's Website www.ppra.go.tz.