INSTITUTO DO PETRÓLEO E GEOLOGIA, IP

Rua Delta 1, Aimutin, Comoro, Dili, Timor – Leste

CONVITE PARA CONCURSO (CPC)

INVITATION TO BID

Título do Projeto/Project Title:

FORNECIMENTO DE FURO DE PERFURAÇÃO ÁGUA

SUPPLY OF DRILL BOREHOLE

Nu Concurso: CPC/ 001/IPG/III/2023

Bid No: **CPC/ 001/IPG/III/2023**

Emitida em:

9 de Março de 2023

Issued on:

9 March 2023

INVITATION TO BIDS

No: CON/001/IPG/III/2023

1). The Instituto do Petróleo e Geologia – Instituto Público (IPG) is seeking to engage with qualified Bidders for the supply of drill borehole:

1. Supply of drill 1 borehole in Betano village, Administrative post of Same, Manufahi municipality.

2. Supply of drill 1 borehole in Mehara village, Administrative post of Tutuala, Lautem municipality.

3. Supply of drill 1 borehole in Vemase village, Administrative post of Vemase, Baucau municipality.

4. Supply of drill 1 borehole in Fatulia village, Administrative post of Venilale, Baucau Municipality.

5. Supply of drill 1 borehole in Matai village, Administrative post of Mau-Catar, Covalima Municipality.

6. Supply of drill 1 borehole in Ailok Laran village, Administrative post of Dom Aleixo, Dili Municipality.

7. Supply of drill 1 borehole in Atabae village, Administrative post of Atabae, Bobonaro Municipality.

8. Supply of drill 1 borehole in Buibau Village, Administrative post of Baucau Vila, Baucau Municipality.

2). Funding for these Services will be made from the the Instituto do Petróleo e Geologia – Instituto Público (IPG) budget for fiscal year 2023.

3). The bidding shall be conducted as a two envelope procedure, wherein the Technical

CONVITE PARA CONCURSO

Nu: CON/001/IPG/III/2023

1). O Instituto do Petróleo e Geologia – Instituto Público (IPG) procura Licitantes qualificados para o fornecimento de furos de perfuração de água:

1. Fornecimento de 1 perfuração de água na Suco de Betano, Posto Administrativo de Same, Município de Manufahi.

2. Fornecimento de 1 perfuração de água na Suco de Mehara, Posto Administrativo de Tutuala, Município de Lautem.

3. Fornecimento de 1 perfuração de água na Suco de Vemase, Posto Administrativo de Vemase, Município de Baucau (LOT-3).

4. Fornecimento de 1 perfuração de água na Suco de Fatulia, Posto Administrativo de Venilale, Município de Baucau.

5. Fornecimento de 1 perfuração de água na Suco de Matai, Posto Administrativo de Mau-Catar, Município de Covalima.

6. Fornecimento de 1 perfuração de água na Suco de Ailok Laran, Posto Administrativo de Dom Aleixo, Município de Dili.

7. Fornecimento de 1 perfuração de água na Suco de Atabae, Posto Administrativo de Atabae, Município de Bobonaro.

Proposal and Financial Proposal shall be submitted together in separately-sealed envelopes.

4). Interested Bidders may obtain further information from:

Procurement Unit.
Institute of Petroleum and Geology - Public Institute (IPG)
jsoares@ipg.tl and hfreitas@ipg.tl or can be freely downloaded from IPG website: www.ipg.tl
Street: Delta 1, Aimutin, Comoro, Dili, East Timor
Phone (+670) 3310 179

5). A pre-bid meeting shall be held on 22 March 2023 at 10.00 AM local time at the address above.

6). Participation in this bidding process is open to all interested international and national Bidders.

7). The bidding documents is available free-of-charge to any interested bidders (Local or International Firms) by sending a written request by email after which a PDF copy of the bidding documents will be sent also by email.
8). The proposals must be received in the Tender Box located at the same address specified above no later than 15:00 hours local time on 29 March 2023. Late proposals will be rejected.
9). Technical Proposals will be opened immediately after the closing time for the submission of the proposals at the same address specified above in the presence of consultants who wish to attend.
10). No Liability will be accepted by Instituto do Petróleo e Geologia – Instituto Público (IPG) for the loss or late delivery of the bid.

11). The Instituto do Petróleo e Geologia – Instituto Público (IPG) will not be responsible for any costs or expenses

8. Fornecimento de 1 perfuração de água na Suco de Buibau, Posto Administrativo de Baucau Vila, Município de Baucau.

2). O financiamento destes Serviços será feito a partir do orçamento do Instituto do Petróleo e Geologia – Instituto Público (IPG) para o ano fiscal de 2023.

3). A licitação será realizada em procedimento de dois envelopes, em que a Proposta Técnica e a Proposta Financeira deverão ser apresentadas juntas em envelopes lacrados separadamente.

4). O Licitante interessado pode obter mais informações em:
Unidade de Aprovisionamento.
Instituto do Petróleo e Geologia – Instituto Público (IPG)
jsoares@ipg.tl e hfreitas@ipg.tl ou pode ser baixado gratuitamente do site do IPG: www.ipg.tl
Rua: Delta 1, Aimutin, Comoro, Dili, Timor-Leste.
Telf. (+670) 3310 179

5). Uma reunião pré-oferta será realizada em 22 de março de 2023 às 10h, horário local, no endereço acima.

6). A participação neste processo de licitação está aberta a todos os Licitantes internacionais e nacionais interessados.
7). Os documentos de licitação estão disponíveis gratuitamente para qualquer licitante interessado (empresas locais ou internacionais) enviando uma solicitação por escrito por e-mail, após o qual uma cópia em PDF dos documentos de licitação será enviada também por e-mail.

8). As propostas devem ser recebidas na Caixa de Licitações localizada no mesmo endereço especificado acima até 15:00

incurred by Bidders in connection with the preparation or delivery of their Bids

horas, horário local, em 29 Março de 2023. As propostas atrasadas serão rejeitadas.

9). As Propostas Técnicas serão abertas imediatamente após o encerramento do prazo para submissão de propostas no mesmo endereço acima especificado na presença dos consultores que desejarem comparecer.

10). Nenhuma responsabilidade será assumida pelo Instituto do Petróleo e Geologia – Instituto Público (IPG) pela perda ou atraso na entrega da licitação.

11). O Instituto do Petróleo e Geologia – Instituto Público (IPG) não será responsável por quaisquer custos ou despesas incorridos pelos Licitantes em conexão com a preparação ou entrega de suas licitação.

Section I. Instructions to Bidders

Table of Clauses

A. General 2
1. Scope of Bid....2
2. Source of Funds....2
3. Corrupt Practices....2
4. Eligible Bidders....3

B. Contents of Bidding Document 4
5. Sections of the Bidding Document....4
6. Clarification of Bidding Document....4
7. Amendment of Bidding Document....5

C. Preparation of Bids 5
8. Cost of Bidding....5
9. Language of Bid....5
10. Documents Comprising the Bid....5
11. Bid Submission Sheets and Price Schedules....6
12. Alternative Bids....6
13. Bid Prices and Discounts....6
14. Currencies of Bid....7
15. Documents Establishing the Eligibility of the Bidder....7
16. Documents Establishing the Qualifications of the Bidder....7
17. Period of Validity of Bids....7
18. Bid Security....7
19. Format and Signing of Bid....8

D. Submission and Opening of Bids 8
20. Sealing and Marking of Bids....8
21. Deadline for Submission of Bids....9
22. Late Bids....9
23. Withdrawal, Substitution, and Modification of Bids....9
24. Bid Opening....10

E. Evaluation and Comparison of Bids 12
25. Confidentiality....12
26. Clarification of Bids....12
27. Responsiveness of Technical Bid....12
28. Nonconformi-ties, Errors, and Omissions....12
29. Preliminary Examination of Bids....13
30. Examination of Terms and Conditions; Technical Evaluation....13
31. Evaluation of Price Bids....14
32. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids....14

F. Award of Contract 14
33. Award Criteria....14
34. Purchaser's Right to Vary Quantities at Time of Award....14
35. Notification of Award....14
36. Signing of Contract....15
37. Performance Security....15

A. General

1. Scope of Bid

1.1 In support of the Invitation for Bids indicated in the Bid Data Sheet (BDS), the Purchaser, as indicated in the BDS, issues this Bidding Document for the Supply of Goods and Related Services incidental there to as specified in Section V, Schedule of Supply (SS). The name and identification of the International Competitive Bidding (ICB) are provided in the BDS.

1.2 Throughout this Bidding Document:

(a) the term "in writing" means communicated in written form with proof of receipt;

(b) if the context so requires, singular means plural and vice versa; and

(c) "day" means calendar day.

2. Source of Funds

2.1 The Purchaser has allocated funds from its current budget year appropriations and intends to apply a portion of the funds to eligible payments under the contract for which this Bidding Document is issued.

3. Corrupt Practices

3.1 The Purchaser requires the bidders to observe the highest standard of ethics during the procurement and execution of such contract. In pursuance of this policy, the Purchaser:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;

(b) will reject a bid for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract;

(c) will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in Purchaser-financed activities if it at any

time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing, an Purchaser-financed contract, and will have the right to inspect the bidder's accounts and records and other documents relating to the Bid submission and contract performance and to have them audited by auditors appointed by the Purchaser.

4. Eligible Bidders

4.1 A Bidder may be a natural person, private entity, or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). In the case of a JV:

(a) all parties to the JV shall be jointly and severally liable; and

(b) a JV shall nominate a Representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

4.2 The Purchaser considers a conflict of interest to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations. The Purchaser will take appropriate actions if it determines that a conflict of interest has flawed the integrity of any procurement process. Consequently all Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:

(a) have controlling shareholders in common; or

(b) receive or have received any direct or indirect subsidy from any of them; or

(c) have the same legal representative for purposes of this Bid; or

(d) have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or

(e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid; or

4.3 A firm that is under a declaration of ineligibility by the Purchaser in accordance with ITB 3, at the date of the deadline for bid submission or thereafter, shall be disqualified.

4.4 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request.

B. Contents of Bidding Document

5. Sections of the Bidding Document

5.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB Clause 7.

PART 1 Bidding Procedures

- Section I. Instructions to Bidders (ITB)
- Section II. Bid Data Sheet (BDS)
- Section III. Evaluation and Qualification Criteria
- Section IV. Bidding Forms

PART 2 Services Requirements

- Section V. Terms of References(TOR)

PART 3 Contract

- Section VI. General Conditions of Contract (GCC)
- Section VII. Special Conditions of Contract (SCC)
- Section VIII. Contract Forms

5.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document.

5.3 The Purchaser is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the Purchaser.

5.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the Bid.

6. Clarification of Bidding Document

6.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Purchaser in writing at the Purchaser's address indicated in the BDS. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than five (5) days prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Document directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Document as a result of

a clarification, it shall do so following the procedure under ITB Clause 7 and Sub-Clause 21.2.

7. Amendment of Bidding Document

7.1 At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda.

7.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from the Purchaser.

7.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB Sub-Clause 21.2

C. Preparation of Bids

8. Cost of Bidding

8.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

9. Language of Bid

9.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.

10. Documents Comprising the Bid

10.1 The Bid shall comprise two envelopes submitted simultaneously, one containing the Technical Bid and the other the Price Bid, enclosed together in an outer single envelope.

10.2 Initially, only the Technical Bids are opened at the address, date and time specified in ITB Sub-Clause 24.1. The Price Bids remain sealed and are held in custody by the Purchaser. The Technical Bids are evaluated by the Purchaser. No amendments or changes to the Technical Bids are permitted. Bids with Technical Bids which do not conform to the specified requirements will be rejected as deficient Bids.

10.3 The Price Bids of the Bidders with the top two technical scores will be opened in public at a date and time advised by the Purchaser. The Price Bids are evaluated and the Contract is awarded to the Bidder who got the highest score in the combined technical and financial evaluations.

10.4 The Technical Bid shall contain the following :

(a) Technical Bid Submission Sheet;

(b) Bid Security, in accordance with ITB Clause 18;

(c) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB Clause 19;

(d) documentary evidence in accordance with ITB Clause 15 establishing the Bidder's eligibility to bid;

(e) documentary evidence in accordance with ITB Clause 16 establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and

(f) any other document required in the BDS.

10.5 The Price Bid shall contain the following:

(a) Price Bid Submission Sheet and the applicable Price Schedules, in accordance with ITB Clauses 11, 13, and 14;

(b) alternative Price Bid corresponding to the alternative Technical Bid, if permissible, in accordance with ITB Clause 12; and

(c) any other document required in the BDS.

11. Bid Submission Sheets and Price Schedules

11.1 The Bidder shall submit the Technical Bid and the Price Bid using the appropriate Submission Sheets furnished in Section IV, Bidding Forms. These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

11.2 The Bidder shall submit, as part of the Price Bid, the Price Schedules for the Services, using the forms furnished in Section IV, Bidding Forms.

12. Alternative Bids

12.1 Unless otherwise indicated in the BDS, alternative bids shall not be considered.

13. Bid Prices and Discounts

13.1 The prices and discounts quoted by the Bidder in the Price Bid Submission Sheet and in the Price Schedules shall conform to the requirements specified below.

13.2 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If no price is quoted for an item in the Price Schedule, the price shall be assumed to be included in the prices of other items.

13.3 The price to be quoted in the Price Bid Submission Sheet excluding any discounts offered.

13.4 The Bidder shall quote any unconditional discounts and the methodology for their application in the Price Bid Submission Sheet.

13.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise specified in the BDS. A Bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB Clause 27. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of

the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

14. Currencies of Bid

14.1 The unit rates and the prices shall be quoted by the bidder entirely in the currency specified in the BDS.

15. Documents Establishing the Eligibility of the Bidder

15.1 To establish their eligibility in accordance with ITB Clause 4, Bidders shall:

(a) Submit a valid Business Registration certificate and proof of tax payment; Copy of the Electoral Card or Identity Card, and Passport if foreign citizen/firm.

(b) complete the eligibility declarations in the Bid Submission Sheet, included in Section IV, Bidding Forms; and

(c) if the Bidder is an existing or intended JV in accordance with ITB Sub-Clause 4.1, submit a copy of the JV Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended JV, as appropriate.

16. Documents Establishing the Qualifications of the Bidder

16.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Bid the evidence indicated for each qualification criteria specified in Section III, Evaluation and Qualification Criteria.

17. Period of Validity of Bids

17.1 Bids shall remain valid for the period specified in the BDS after the bid submission deadline date prescribed by the Purchaser. A Bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.

17.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB Clause 18.1, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid.

18. Bid Security

18.1 The Bidder shall furnish as part of its bid, a Bid Security in the form of a Bid Securing Declaration.

18.2 The Bid Securing Declaration shall use the form included in Section 4 (Bidding Forms)

18.3 Any Bid not accompanied by a Bid Securing Declaration shall be rejected by the Employer as nonresponsive.

18.4 The Bid Securing Declaration shall be executed:

(a) if a Bidder withdraws its Bid during the period of bid validity as specified in ITB Clause 17.1, except as provided in ITB Sub-Clause 17.2; or

(b) if the successful Bidder fails to :

(i) sign the Contract in accordance with ITB Clause 39;

(ii) furnish a Performance Security in accordance with ITB Clause 37; or

(iii) accept the correction of its Bid Price pursuant to ITB Clause 28.

18.5 The Bid Securing Declaration of a JV shall be in the name of the JV that submits the Bid. If the JV has not been legally constituted at the time of bidding, the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 15.1.

19. Format and Signing of Bid

19.1 The Bidder shall prepare one original of the Technical Bid and one original of the Price Bid as described in ITB Clause 10 and clearly mark each "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". In addition, the Bidder shall submit copies of the Technical Bid and the Price Bid, in the number specified in the BDS and clearly mark them "COPY NO… - TECHNICAL BID" and "COPY NO…. - PRICE BID". In the event of any discrepancy between the original and the copies, the original shall prevail.

19.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the BDS and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Bid, except for unamended printed literature, shall be signed or initialled by the person signing the Bid.

19.3 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the Bid.

D. Submission and Opening of Bids

20. Sealing and Marking of Bids

20.1 The Bidder shall enclose the original of the Technical Bid, the original of the Price Bid, and each copy of the Technical Bid and each copy of the Price Bid, including alternative bids, if permitted in accordance with ITB Clause 12, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL - TECHNICAL BID", "ORIGINAL - PRICE BID" and "COPY NO… - TECHNICAL BID" and "COPY NO…. - PRICE BID", as appropriate. These envelopes containing the original and the copies shall then be enclosed in one single envelope.

20.2 The inner and outer envelopes shall:

(a) bear the name and address of the Bidder;

(b) be addressed to the Purchaser in accordance with ITB Sub-Clause 21.1; and

(c) bear the specific identification of this bidding process indicated in the BDS.

20.3 The outer envelopes and the inner envelopes containing the Technical Bids shall bear a warning not to open before the time and date for the opening of Technical Bids, in accordance with ITB Sub-Clause 24.1.

20.4 The inner envelopes containing the Price Bids shall bear a warning not to open until advised by the Purchaser in accordance with ITB Sub-Clause 24.2.

20.5 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.

20.6 Alternative Bids, if permissible in accordance with ITB Clause 12, shall be prepared, sealed, marked, and delivered in accordance with the provisions of ITB Clauses 19 and 20, with the inner envelopes marked in addition "ALTERNATIVE NO…." as appropriate.

21. Deadline for Submission of Bids

21.1 Bids must be received by the Purchaser at the address and no later than the date and time indicated in the BDS.

21.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB Clause 7, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

22. Late Bids

22.1 The Purchaser shall not consider any Bid that arrives after the deadline for submission of Bids, in accordance with ITB Clause 21. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

23. Withdrawal, Substitution, and Modification of Bids

23.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written Notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB Sub-Clause 19.2 (except that withdrawal notices do not require copies). The corresponding substitution or modification of the bid must accompany the respective written notice. All Notices must be:

(a) submitted in accordance with ITB Clauses 19 and 20 (except that Withdrawal Notices do not require copies), and in addition, the respective inner and outer envelopes shall

be clearly marked "Withdrawal," "Substitution," "Modification"; and

(b) received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB Clause 21.

23.2 Bids requested to be withdrawn in accordance with ITB Sub-Clause 23.1 shall be returned unopened to the Bidders.

23.3 No Bid shall be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in ITB Clause 17.1 or any extension thereof.

24. Bid Opening

24.1 The Purchaser shall conduct the opening of Technical Bids in the presence of Bidders' representatives who choose to attend, at the address, date and time specified in the BDS.

24.2 The Price Bids will remain unopened and will be held in custody of the Purchaser until the time of opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. If the Technical Bid and the Price Bid are submitted together in one envelope, the Purchaser may reject the Bid. Alternatively, the Price Bid may be immediately resealed for later evaluation.

24.3 First, envelopes marked "WITHDRAWAL" shall be opened, read out, and recorded, and the envelope containing the corresponding Bid shall not be opened, but returned to the Bidder. No Bid shall be withdrawn unless the corresponding Withdrawal Notice contains a valid authorization to request the withdrawal and is read out and recorded at bid opening.

24.4 Next, outer envelopes marked "SUBSTITUTION" shall be opened. The inner envelopes containing the Substitution Technical Bid and/or Substitution Price Bid shall be exchanged for the corresponding envelopes being substituted, which are to be returned to the Bidder unopened. Only the Substitution Technical Bid, if any, shall be opened, read out, and recorded. Substitution Price Bids will remain unopened in accordance with ITB Sub-Clause 24.2. No envelope shall be substituted unless the corresponding Substitution Notice contains a valid authorization to request the substitution and is read out and recorded at bid opening.

24.5 Next, outer envelopes marked "MODIFICATION" shall be opened. No Technical Bid and/or Price Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at the opening of Technical Bids. Only the Technical Bids, both Original as well as Modification, are to be opened, read out, and recorded at the opening. Price Bids, both Original as well as Modification, will remain unopened in accordance with ITB Sub-Clause 24.2.

24.6 All other envelopes holding the Technical Bids shall be opened one at a time, and the following read out and recorded :

(a) the name of the Bidder;

(b) whether there is a modification or substitution;

(c) the presence of a Bid Security, if required; and

(d) any other details as the Purchaser may consider appropriate.

Only Technical Bids and alternative Technical Bids read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at the opening of Technical Bids except for late bids, in accordance with ITB Sub-Clause 22.1.

24.7 The Purchaser shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, modification, or alternative offer; and the presence or absence of a Bid Security, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

24.8 **In accordance with the applicable law, the Purchaser shall open the Price Bids of only the Bidders with the top two technical scores based on the result of the Technical Evaluation.**

24.9 At the end of the evaluation of the Technical Bids, the Purchaser will invite **the Bidders with the top two technical scores** to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the Purchaser. Bidders shall be given reasonable notice of the opening of Price Bids.

24.10 The Purchaser will notify Bidders in writing who have been rejected and return their Price Bids unopened.

24.11 The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance.

24.12 The envelopes containing Price Bids of the **Bidders with the top two technical scores** shall be opened one at a time and the following read out and recorded:

(a) the name of the Bidder

(b) whether there is a modification or substitution;

(c) the Bid Prices, including any discounts and alternative offers; and

(d) any other details as the Purchaser may consider appropriate.

Only Price Bids, discounts, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the opening of Price Bids.

24.13 The Purchaser shall prepare a record of the opening of Price Bids that shall include, as a minimum: the name of the Bidder, the Bid Price (per lot if applicable), any discounts, and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

E. Evaluation and Comparison of Bids

25. Confidentiality

25.1 Information relating to the examination and evaluation of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.

25.2 Any attempt by a Bidder to influence the Purchaser in the examination and evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.

25.3 Notwithstanding ITB Sub-Clause 25.2, from the time of opening the Technical Bids to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.

26. Clarification of Bids

26.1 To assist in the examination and evaluation of the Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the Price Bids, in accordance with ITB Clause 28.

27. Responsiveness of Technical Bid

27.1 The Purchaser's determination of the scores of a Technical Bid is to be based on the contents of the Technical Bid itself.

27.2 If a Technical Bid does not attain the passing score specified in the Section III - Evaluation and Qualification Criteria, it shall be rejected by the Purchaser.

28. Nonconformities, Errors, and Omissions

28.1 For the Price Bid which are opened in accordance with the ITB 24.8, the Purchaser will correct arithmetical errors during evaluation of Price Bids on the following basis:

(a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit

price, in which case the total price as quoted shall govern and the unit price shall be corrected;

(b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

28.2 If the Bidder who obtained the highest score during the combined evaluation of the Technical and Financial Bid does not accept the correction of errors, its Bid shall be disqualified and its Bid Security may be forfeited.

29. Preliminary Examination of Bids

29.1 The Purchaser shall examine the Technical Bid to confirm that all documents and technical documentation requested in ITB Sub-Clause 10.4 have been provided, and to determine the completeness of each document submitted.

29.2 The Purchaser shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer shall be rejected.

(a) Technical Bid Submission Sheet in accordance with ITB Sub-Clause 11.1;

(b) written confirmation of authorization to commit the Bidder;

(c) Bid Security, if applicable; and

29.3 Likewise, following the opening of Price Bids, the Purchaser shall examine the Price Bids to confirm that all documents and financial documentation requested in ITB Sub-Clause 10.5 have been provided, and to determine the completeness of each document submitted.

29.4 The Purchaser shall confirm that the following documents and information have been provided in the Price Bid. If any of these documents or information is missing, the offer shall be rejected.

(a) Price Bid Submission Sheet in accordance with ITB Sub-Clause 11.1; and

(b) Price Schedules, in accordance with ITB Clauses 11, 13, and 14.

30. Examination of Terms and Conditions; Technical Evaluation

30.1 The Purchaser shall examine the Bids to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder.

30.2 The Purchaser shall evaluate the technical aspects of the Bid submitted in accordance with the documentary evidence specified in Section V, Schedule of Supply, to confirm that all

requirements specified in Section V, Schedule of Supply of the Bidding Document have been met.

31. Evaluation of Price Bids

31.1 The Purchaser shall evaluate the Price Bids of the Bidders with the top two technical scores.

31.2 To evaluate a Price Bid, the Purchaser shall consider the following:

(a) the Bid Price, excluding Provisional Sums;

(b) price adjustment for correction of arithmetic errors in accordance with ITB Sub-Clause 28.1;

(c) price adjustment due to discounts offered in accordance with ITB Sub-Clause 13.4;

32. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids

32.1 The Purchaser reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.

F. Award of Contract

33. Award Criteria

33.1 The Purchaser shall award the Contract to the Bidder with the highest combined technical and financial score evaluated with the procedure specified under Section III, Evaluation and Qualification Criteria, provided further that the Bidder has remained qualified to perform the Contract satisfactorily, on conducting verifications needed.

33.2 A Bid shall be rejected if it is found on verification that the qualification criteria as specified in Section III, Evaluation and Qualification Criteria are no longer met by the Bidder with the first highest combined technical and financial score. In this event the Purchaser shall proceed to the Bidder with the second highest combined technical and financial score to make a similar reassessment of that Bidder's capabilities to perform satisfactorily.

34. Purchaser's Right to Vary Quantities at Time of Award

34.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Services originally specified in Section V, Schedule of Supply, provided this does not exceed the percentages indicated in the BDS, and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document.

35. Notification of Award

35.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted. At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding.

35.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.

35.3 The Purchaser will publish in its website the results identifying the bid and lot numbers and the following information: (i) name of each Bidder who submitted a Bid; (ii) bid prices as read out at bid opening; (iii) name and evaluated prices of each Bid that was evaluated; (iv) name of bidders whose bids were rejected and the reasons for their rejection; and (v) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. After publication of the award, unsuccessful bidders may request in writing to the Purchaser for a debriefing seeking explanations on the grounds on which their bids were not selected. The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after Publication of contract award, requests a debriefing.

36. Signing of Contract

36.1 Promptly after notification, the Purchaser shall send to the successful Bidder the Agreement and the Special Conditions of Contract.

36.2 Within fourteen (14) days of receipt of the Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.

37. Performance Security

37.1 Within fourteen (14) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, using for that purpose the Performance Security Form included in Section VIII, Contract Forms, or another form acceptable to the Purchaser.

37.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the Bidder with the second highest combined technical and financial scores and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.

Section III. Evaluation and Qualification Criteria

The evaluation shall be based on the documents that the Bidder has submitted with its Bid. Therefore, the Bidder is reminded to submit all the necessary information and documentation to enable the Purchaser to make an evaluation. Failure of the Bidder to provide the necessary information may result in the rejection of the Bid.

Bid evaluation shall be undertaken in two stages. The first stage will be the Evaluation of Technical Bids applying the technical evaluation criteria, sub criteria, and scoring system specified below. The maximum technical score is **500 points and the passing score for bidder qualification is 375 points.**

The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 500.

The formula for determining the financial scores (Sf) of all other Proposals is calculated as follows:

Sf = 500 x Fm/ F, in which "Sf" is the financial score, "Fm" is the lowest offered price and "F" is the offered price of the proposal under consideration.

The weights given to the Technical (T) and Financial (P) Proposals are:
T = 70% and
P = 30%

The final ranking shall be determined by combining the Technical and Price scores, applying a **Technical: Price Ratio of 30:70**.

Proposals are ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) as following: S = St x T% + Sf x P%.

Technical Evaluation:
The technical evaluation will be undertaken in two steps. The first step will be the determination of the Bidder's compliance to the basic bid and eligibility requirements to be undertaken on a "Pass or Fail" basis.

1. The following documentation shall be checked:
   - Signatory to the bid is authorized to commit the Bidder as per Clause ITB 19.2;
   - Submit a valid Business Registration certificate and proof of tax payment; Copy of the Electoral Card or Identity Card, and Passport if foreign citizen/firm; and

2. The Purchaser shall also examine the Technical Bids to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder without any reservation.
3. The Purchaser shall also confirm that all requirements specified in Section V, Schedule of Supply of the Bidding Document have been met without any material deviation.
4. The Purchaser shall also confirm that:

- The Bidder is not subject to current sanctions or declaration of ineligibility for fraud and corruption by the Purchaser;
- Bidder does not have a conflict of interest with one or more parties participating in or executing this bidding process; and
- In the case of a joint venture, confirm that the Bidder submitted a certification that all parties shall be jointly and severally liable and that the Bidder has nominated a Representative who shall have the authority to conduct all business for and on behalf of any and all parties of the joint venture during the bidding process, and in the event the joint venture is awarded a contract, also during contract execution.

Only those Bidders who passed the Step 1 evaluation shall be considered further in the Step 2 – Technical evaluation which is to evaluate and score the technical bids on the criteria and scoring system provided below:

Criteria	Minimum Requirements	Evaluation Weight
1. Experience in Similar Contracts	The bidder must provide proof that it has successfully completed at least three (3) satisfactory contract completion in Timor – Leste during the last 6 years with the contract amount range between USD15, 000.00-USD100, 000.00).	**20**
2. Financial Capacity	The bidder must provide proof that it has access to or availability of financial resources, such as liquid assets, lines of credit, and other financial means other than any contractual advance payments, to meet a cash flow requirement of $100,000 and its current contracts commitments.	**35**
3. Methodology and Work plan	Description of approach and work plan in responding to Term of References	**20**
4. Adequate drilling equipment and workforse	Provide detail list of the drilling equipment (Name; Model; Quantity; Year of manufacturing; Provide list of work forces	**25**
Total		**100**

The scoring shall be in accordance with the following table:

Score	Score Definition
0	Not acceptable, has not met any reasonable criteria
1	Has only met few minimum requirements, and is not acceptable
2	Has only met some minimum requirements but not all, and may not be acceptable
3	Has met most of the minimum requirements, and may be acceptable
4	Has met all of the minimum requirements, and is acceptable
5	Has met and exceeded all requirements, and is acceptable

Section IV. Term of References

1. Supply of drill 1 borehole in Betano village, Administrative post of Same, Manufahi municipality

1. Background

Instituto do Petróleo e Geologia-Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration. Due to the luck of subsurface data to link the existing boreholes entire the Betano Village, IPG is implementing one drill point in Betano Village, Same Administrative Post, Manufahi Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG – IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.
Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Betano Village, Same Administrative Post, Manufahi Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

c. The borehole should be drilled at a diameter of 8½ inches from 0 to a maximum depth of 70 m and then running casings installation. The casings to be used are of 150 **mm (6'')** in diameter PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2 - meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take

every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the **log forms** for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will supply and install filter gravel pack, which is clean, uniform and of approved quality collected from riverbeds consisting of particles with a diameter of 4 – 6 mm. The volume of the filter pack required must be calculated taking into account the length of the screened area and an additional 50% to allow for settlement above screen casings, and the annular space between the borehole and the external diameter of the casing.

k. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

l. After drilling, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for running casing installation which Both Parties have discussed screen position.

m. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 150 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe Class 9 that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water

is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE-TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food, and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

The Contractor's team leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to providing his crew with safety helmets, hard-toed boots (safety boots) or gumboots, heavy duty gloves, protective glasses and

ensuring that all tools and equipment are in a safe condition and ensuring that his employees adopt safe working methods. The drilling crew will wear a uniform provided by IPG at the site. No military-looking clothing will be accepted at any time.
Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

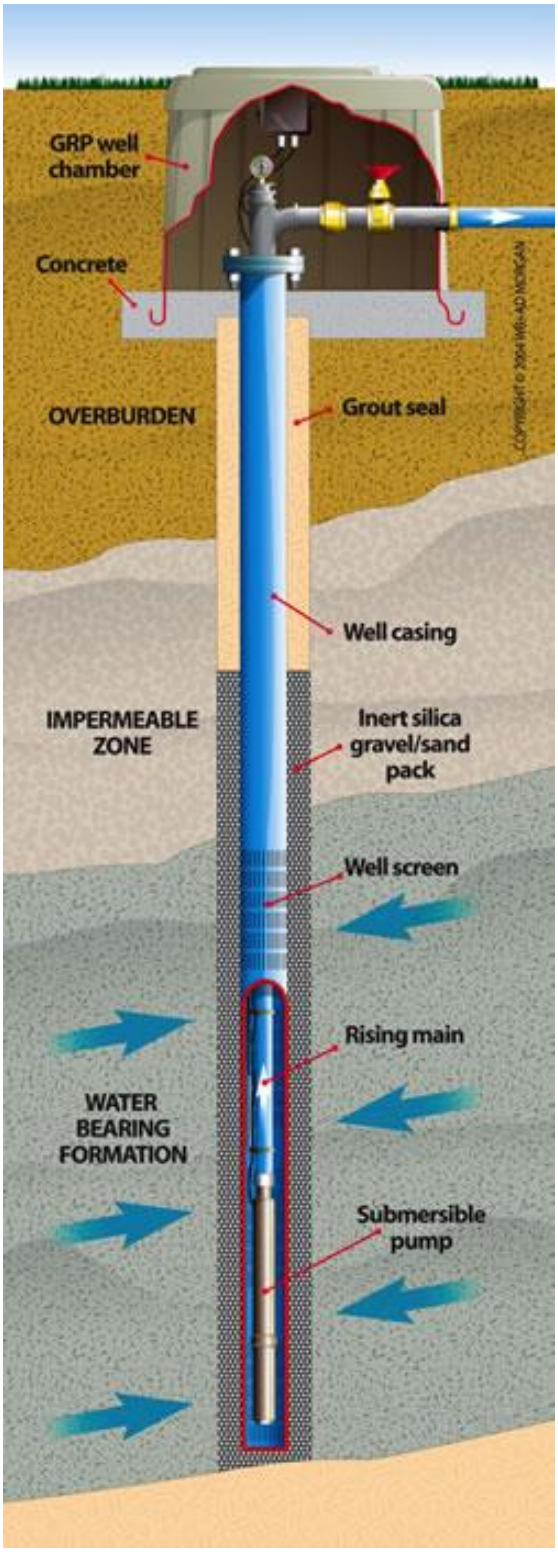
8. Defect liability period

The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	70
5	Cutting samples 0.5Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	70
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.		
11	Bore cleaning & development (works including de-mudding operation, bore development air-lift by air compressor). The water shall be free of sand particles at the end	hours	4

	of well development.		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1
C	**PUMP TEST**		
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step		
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)		
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)		
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole		
17	Supervision of borehole drilling and completion		
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)		
D	**PUMP SET**		
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63mm blue line poly pipe 40 – 45 m		
20	Inclusive of Control Panel		
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter		
22	Inclusive of Well Head installation with 6" flange		
23	All materials supplied and installed		



An example of expected result for Betano- Drilling

2. Supply of drill 1 borehole in Mehara village, Administrative post of Tutuala, Lautem municipality

1. Background

Instituto do Petróleo e Geologia – Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration.Due to the luck of subsurface data to link the existing boreholes entire the Mehara Village, IPG is implementing one drill point in Porlamanu, Mehara Village, Tutuala Administrative Post, Lautem Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.
Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in Porlamanu, Mehara Village, Tutuala Administrative Post, Lautem Municipalityby IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

c. Continue to drill a pilot hole (air drilling using air compressor) with diameter 150 **mm (6')** from 0 to a maximum depth of 85 m; once the well logging show potential water then enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing. from 0 m to 85m before casings installation. The casings to be used are of 150 **mm (6'')** in diameter PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination.

Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the **log forms** for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

k. After drilling pilot hole, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for reaming then Both Parties will discuss screen position in this stage.

l. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 150 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development (If Possible/Required)

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe with 7 mm of minimum thickness that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples
The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE-TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water
The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works
4.6.1 Temporary Lid
The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

f. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

g. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

h. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

i. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

j. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety
The Contractor's team leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to providing his crew with safety helmets, hard-toed boots (safety boots) or gumboots, heavy duty gloves, protective glasses and

ensuring that all tools and equipment are in a safe condition and ensuring that his employees adopt safe working methods. The drilling crew will wear a uniform provided by IPG at the site. No military-looking clothing will be accepted at any time.
Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1 The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

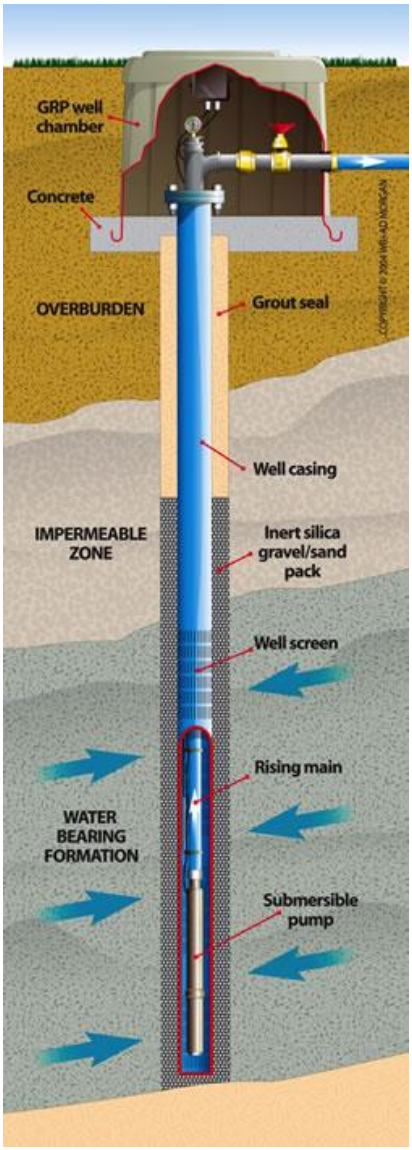
The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

No	DESCRIPTION	UNIT	UNIT
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	Sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6 m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Air Drilling 6" pilot hole utilizing compressor	m	85
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	85
7	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing.	m	85
8	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	73
9	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12
10	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	85

11	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)		
12	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor, disinfection). The water shall be free of sand particles at the end of well development (If required)	hours	4
13	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	sum	1
C	PUMP TEST		
14	Step – Drawdown Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4
15	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24
16	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	1
17	Collect Water Sampling & laboratory for chemical and bacteriological analysis of the borehole	set	1
18	Data analysis, drilling & pumping test report	set	1
19	Supervision of borehole drilling and completion	sum	1
20	Final Completion Report: 3x Hard Copies plus Soft Copy	set	1
D	**PUMP SET**		
21	Supply and installation of Submersible Pump equivalent with Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m	set	1
22	Inclusive of Control Panel		
23	Inclusive of Well Head Manifold 3"diameter:		

	Check Valve, Gate Valve, Water Meter		
24	Inclusive of Well Head installation with 6" flange		
25	All materials supplied and installed		



An example of expected result for Porlamanu Mehara Village- Drilling

3. Supply of drill 1 borehole in Vemase village, Administrative post of Vemase, Baucau municipality

1. Background

Instituto do Petróleo e Geologia – Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration. Due to the luck of subsurface data to link the existing boreholes entire the Vemase Village, IPG is implementing one drill point in 1 Vemase Village, Vemase Administrative Post, Baucau Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.
Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Vemase Village, Vemase Administrative Post, Baucau Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

c. The borehole should be drilled at a diameter of 8½ inches from 0 to a maximum depth of 70 m and then running casings installation. The casings to be used are of 150 **mm (6'')** in diameter PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the **log forms** for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will supply and install filter gravel pack, which is clean, uniform and of approved quality collected from riverbeds consisting of particles with a diameter of 4-6 mm. The volume of the filter pack required must be calculated taking into account the length of the screened area and an additional 50% to allow for settlement above screen casings, and the annular space between the borehole and the external diameter of the casing.

k. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

l. After drilling, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for running casing installation which Both Parties have discussed screen position.

m. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 150 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

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a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

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4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe PN9 Class that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

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4.5.1. Borehole Protection

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The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

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a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

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c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

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working methods. The drilling crew will wear a uniform provided by IPG at the site. No military-looking clothing will be accepted at any time.
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7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

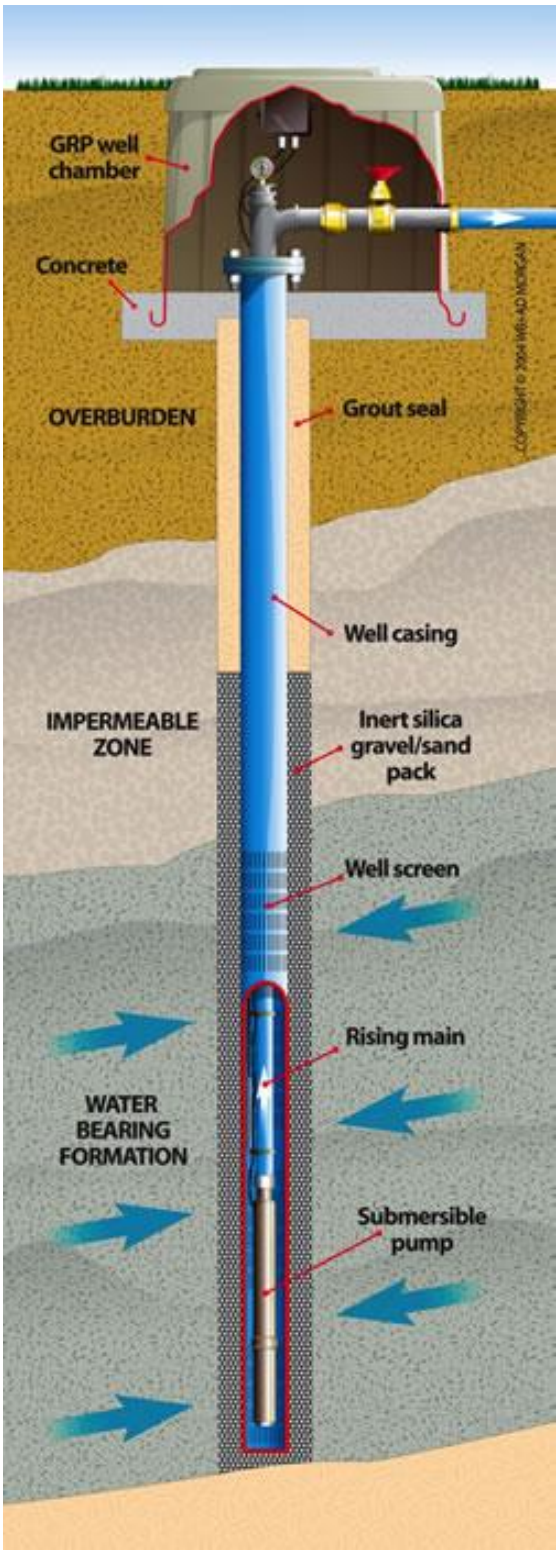
The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

Drilling of one Borehole in Vemase Village, Vemase Administrative Post, Baucau Municipality

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Drilling 8 –1 /2 " diameter hole to suit final designated 6" casing.	m	70
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	70
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.		
11	Bore cleaning & development (works including de-mudding operation, bore	hours	4

	development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1
C	**PUMP TEST**		
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step		
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)		
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)		
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole		
17	Supervision of borehole drilling and completion		
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)		
D	**PUMP SET**		
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m		
20	Inclusive of Control Panel		
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter		
22	Inclusive of Well Head installation with 6" flange		
23	All materials supplied and installed		



An example of expected result for Vemase- Drilling

4. Fornecimento de 1 perfuração de água na Suco de Fatulia, Posto Administrativo de Venilale, Município de Baucau

1. Background

Instituto do Petróleo e Geologia – Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration.

Due to the luck of subsurface data to link the existing boreholes entire the Fatulia Village, IPG is implementing one drill point in 1 Fatulia Village, Venilale Administrative Post, Baucau Municipality with an objective to correlate and interpret aquifer distribution within the area.

IPG – IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.

Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Fatulia Village, Venilale Administrative Post, Baucau Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

c. Continue to drill a pilot hole (air drilling using air compressor) with diameter 150 **mm (6')** from 0 to a maximum depth of 75 m; once the well logging show potential water then enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing. from 0 m to 75m before casings installation. The casings to be used are of 150 **mm (6'')** in diameter PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked

labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the **log forms** for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

k. After drilling pilot hole, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for reaming then Both Parties will discuss screen position in this stage.

l. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 150 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development (If Possible/Required)

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24 hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe PN9 Class that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE – TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food, and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

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

Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

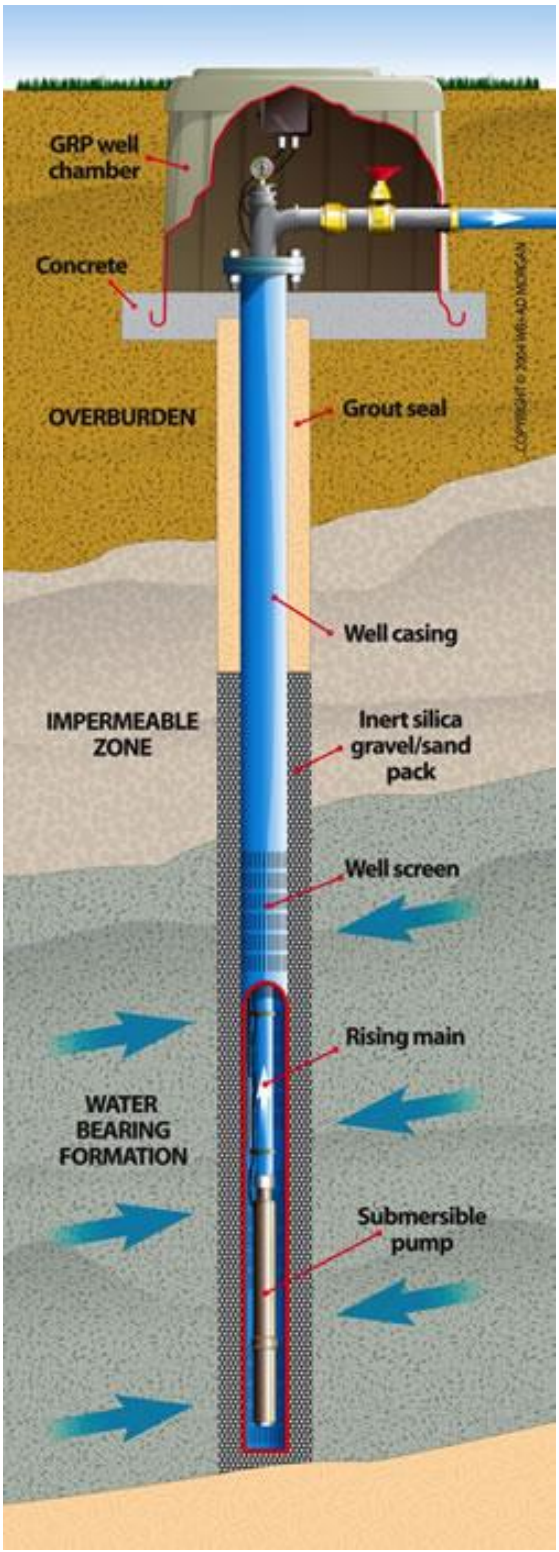
9. Technical Specifications

Drilling of one Borehole in Fatulia Village, Venilale Administrative Post, Baucau Municipality

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	Sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6 m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Air Drilling 6" pilot hole utilizing compressor	m	75
5	Cutting samples 0.5Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	75
7	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing.	m	75
8	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	63
9	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen,	m	12

	PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.		
10	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	75
11	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)		
12	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development (If required)	hours	4
13	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	sum	1
C	PUMP TEST		
14	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4
15	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24
16	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	1
17	Collect Water Sampling & laboratory test for chemical and bacteriological analysis of the borehole	set	1
18	Data analysis, drilling & pumping test report	set	1
19	Supervision of borehole drilling and completion	sum	1
20	Final Completion Report: 3 x Hard Copies plus Soft Copy	set	1
D	**PUMP SET**		

21	Supply and installation of Submersible Pump equivalent with Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m	set	1
22	Inclusive of Control Panel		
23	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter		
24	Inclusive of Well Head installation with 6" flange		
25	All materials supplied and installed		



An example of expected result for Venilale- Drilling

5. Fornecimento de 1 perfuração de água na Suco de Matai, Posto Administrativo de Mau-Catar, Município de Covalima

1. Background

Instituto do Petróleo e Geologia – Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration.Due to the luck of subsurface data to link the existing boreholes entire the Matai Village, IPG is implementing one drill point in Matai Village, Maucatar Administrative Post, Covalima Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.
Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Matai Village, Maucatar Administrative Post, Covalima Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

a. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

b. The borehole should be drilled at a diameter of **8½ inches** from 0 to a maximum depth of 60 m and then running casing installation. The casings to be used are of 150 **mm (6'')** in diameter PN9 Class.

c. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

d. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked

labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

e. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

f. The Contractor will be required to complete the **log forms** for the borehole.

g. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

h. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

i. The Contractor will supply and install filter gravel pack, which is clean, uniform and of approved quality collected from riverbeds consisting of particles with a diameter of 4-6 mm. The volume of the filter pack required must be calculated taking into account the length of the screened area and an additional 50% to allow for settlement above screen casings, and the annular space between the borehole and the external diameter of the casing.

j. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

k. After drilling, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for running casing installation which Both Parties have discussed screen position.

l. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 152.4 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe PN9 Class that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE – TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food, and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor’s expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor’s own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

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

Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

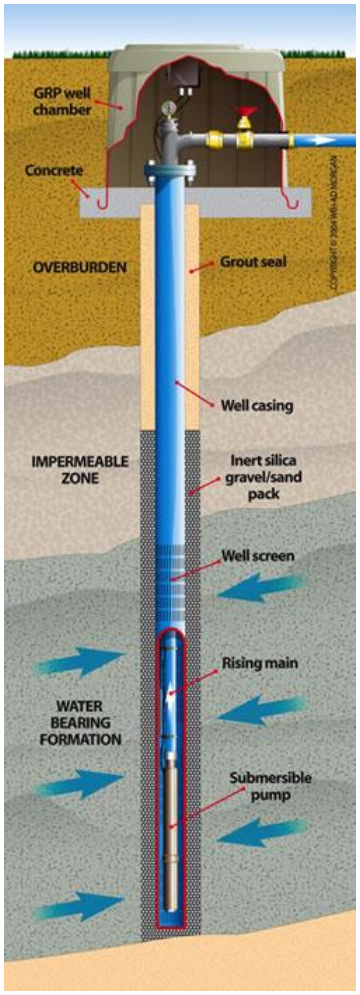
The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

Bill of Quantity for Drilling of one Borehole in Matai Village, Maucatar Administrative Post, Covalima Municipality

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	60
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	60
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	48
8	Supply and installation of 150mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	60
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.		
11	Bore cleaning & development (works including	hours	4

	de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1
C	**PUMP TEST**		
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step		
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)		
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)		
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole		
17	Supervision of borehole drilling and completion		
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)		
	TOTAL DRILLING CONSTRUCTION		
D	**PUMP SET**		
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m		
20	Inclusive of Control Panel		
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter		
22	Inclusive of Well Head installation with 6" flange		
23	All materials supplied and installed		



An example of expected result for Matai- Drilling

6. Fornecimento de 1 perfuração de água na Suco de Ailok Laran, Posto Administrativo de Dom Aleixo, Município de Dili

1. Background

Instituto do Petróleo e Geologia-Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration. Due to the luck of subsurface data to link the existing boreholes entire the Ailok Laran Village, IPG is implementing one drill point in Ailok Laran Area, Bairo Pite Village, Dom Aleixo Administrative Post, Dili Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.

Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Ailok Laran Area, Bairo Pite Village, Dom Aleixo Administrative Post, Dili Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

a. Drilling hole to suit 8" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

b. The borehole should be drilled at a diameter of 6¾ inches from 0 to a maximum depth of 65 m and then running casings installation. The casings to be used are of **100 mm (4'')** in diameter PN9 Class.

c. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

d. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The

samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

e. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

f. The Contractor will be required to complete the **log forms** for the borehole.

g. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

h. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 100 **mm (4'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

i. The Contractor will supply and install filter gravel pack, which is clean, uniform and of approved quality collected from riverbeds consisting of particles with a diameter of 4 – 6 mm. The volume of the filter pack required must be calculated taking into account the length of the screened area and an additional 50% to allow for settlement above screen casings, and the annular space between the borehole and the external diameter of the casing.

j. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

k. After drilling, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for running casing installation which Both Parties have discussed screen position.

l. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 100 **mm (4'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS/DAVEY pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 5 L/sec.

b. 4 hours constant rate pumping test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Constant rate pumping test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e., weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe PN9 Class that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE-TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food, and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

The Contractor's team leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to providing his crew with safety helmets, hard-toed boots (safety boots) or gumboots, heavy duty gloves, protective glasses and ensuring that all tools and equipment are in a safe condition and ensuring that his employees adopt safe

working methods. The drilling crew will wear a uniform provided by IPG at the site. No military-looking clothing will be accepted at any time.

Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1 The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

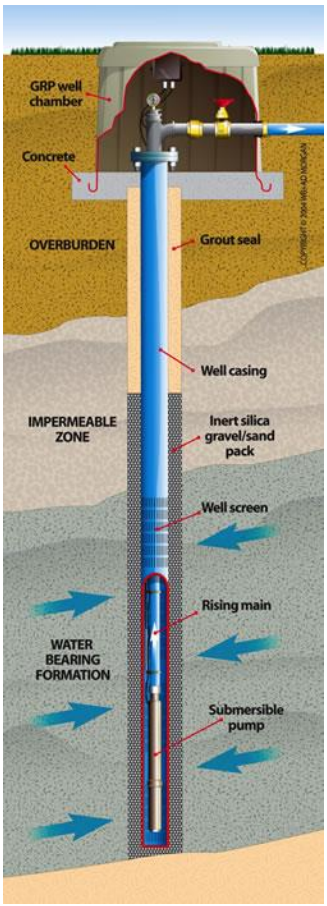
9. Technical Specifications

Drilling of one Borehole in Ailok Laran Area, Bairo Pite Village, Dom Aleixo Administrative Post, Dili Municipality

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**		
1	Mobilization – Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	Sum	1
2	Erecting and dismantling of drilling rig unit at the site	Sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 8" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as seal to prevent contamination to the aquifer.	M	6
4	Drilling 6 – 3/4"hole to suit final designated 100mm casing	M	65
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	M	65
7	Supply and installation of 100 mm diameter UPVC Casing, UPVC PN9	M	53

8	Supply and installation of 100 mm Machine Slotted UPVC Bore Screen PN 9, apertures 1.5 mm / 2 mm	M	12
9	Supply & install 3/4" piezometer	M	65
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.		
11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	Sum	1
C	**PUMP TEST**		
13	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	4
14	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole	Set	1
15	Supervision of borehole drilling and completion	Sum	1
16	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, testing report and project photos)	Set	1
D	**PUMP SET**		

18	Supply and installation of one Submersible Pump equivalent with Grundfos 1.5 LPS Pump 1.1 kW Motor, Single Phase 240V complete with 45 meters of 32mm poly pipe and Electrical Cable Components. Well Head fitted with 0/800 Pressure Gauge; Gate Valve all incorporated into common Manifold. System is automatic start/stop using pressure switch, pressure cell.	Set	1



An example of expected result for Ailok laran – Drilling

7. Fornecimento de 1 perfuração de água na Suco de Atabae, Posto Administrativo de Atabae, Município de Bobonaro

1. Background

Instituto do Petróleo e Geologia – Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration. Due to the luck of subsurface data to link the existing boreholes entire the Atabae Village, IPG is implementing one drill point in 1 Atabae Village, Atabae Administrative Post, Bobonaro Municipality with an objective to correlate and interpret aquifer distribution within the area. IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.

Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in 1 Atabae Village, Atabae Administrative Post, Bobonaro Municipality by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependant on strata encountered, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.

c. The borehole should be drilled at a diameter of 8½ inches from 0 to a maximum depth of 70 m and then running casings installation. The casings to be used are of **150 mm (6'')** in diameter, PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG

to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2 - meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the **log forms** for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 150 **mm (6'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will supply and install filter gravel pack which is clean, uniform and of approved quality collected from river beds consisting of particles with a diameter of 4 – 6 mm. The volume of the filter pack required must be calculated taking into account the length of the screened area and an additional 50% to allow for settlement above screen casings, and the annular space between the borehole and the external diameter of the casing.

k. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing

Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

l. After drilling, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for running casing installation which Both Parties have discussed screen position.

m. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 150 **mm (6'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be

conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe PN9 Class that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE-TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the

Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food, and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out and will authorize in advance the drilling of a new hole, at a site near the abandoned one, if need be, at the Contractor's expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

The Contractor's team leader shall take all reasonable precautions to prevent any death or injury to persons during said undertaken activities. These precautions shall include but not be limited to providing his crew with safety helmets, hard-toed boots (safety boots) or gumboots, heavy duty gloves, protective glasses and ensuring that all tools and equipment are in a safe condition and ensuring that his employees adopt safe working methods. The

drilling crew will wear a uniform provided by IPG at the site. No military-looking clothing will be accepted at any time.

Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be

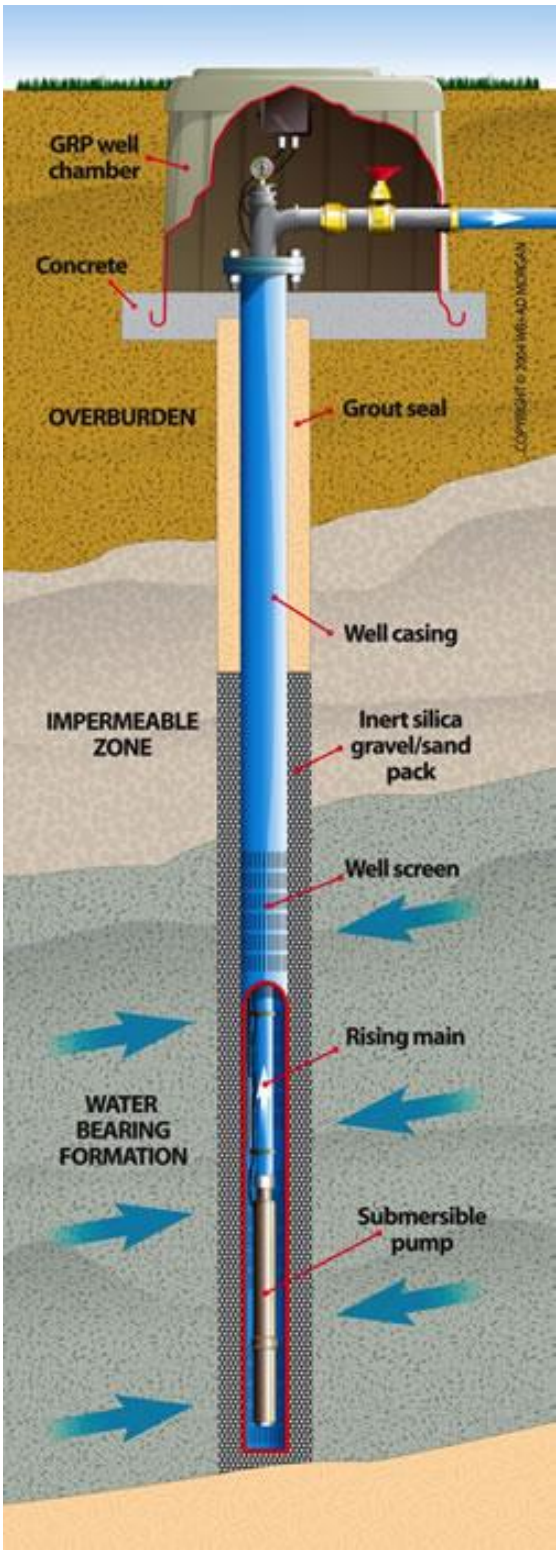
notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

Bill of Quantity for Drilling of one Borehole in Atabae Village, Atabae Administrative Post, Bobonaro Municipality

No	DESCRIPTION	UNIT	QUANTITY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	sum	1
B	**CONSTRUCTION WORKS**		
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	70
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN 12, aperture 1.5 mm / 2mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	70
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.		

11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab.	sum	1
C	**PUMP TEST**		
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step		
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)		
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)		
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole		
17	Supervision of borehole drilling and completion		
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)		
D	**PUMP SET**		
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m		
20	Inclusive of Control Panel		
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter		
22	Inclusive of Well Head installation with 6" flange		
23	All materials supplied and installed		



An example of expected result for Atabae- Drilling

8. Fornecimento de 1 perfuração de água na Suco de Buibau, Posto Administrativo de Baucau Vila, Município de Baucau

1. Background

Instituto do Petróleo e Geologia-Instituto Público (IPG) is conducting Hydrostratigraphic study with an objective to simplify the architecture of the different geological units in the subsurface which can be used as fundamental information when dealing with groundwater exploration.

Due to the luck of subsurface data to link the existing boreholes entire the BUIBAU Village, IPG is implementing one drill point in BUIBAU Village with an objective to correlate and interpret aquifer distribution within the area.

IPG-IP is seeking for a Contractor to carry out the works of mobilizing machinery, drilling borehole and provide all the required tools, equipment, materials and labour for construction of the borehole, its development, pump testing, hand pump installations, and ensure that all the necessary requirements of borehole development and testing are up to the required standards as clearly specified on the technical specifications in the Bill of Quantity attached therein.

2. Scope of Work

IPG will provide location map indicating the drilling site, include report of geophysical study at the drilling site to the selected Contractor.

Borehole drilling and construction will be supervised by the IPG team, the selected Contractor must perform in a satisfactory manner, the drilling of one (1) borehole to be installed with pump at location determined in BUIBAU Village by IPG. The Contractor is to ensure that borehole log is collected properly at 2 m intervals.

3. Drilling Stipulations

3.1 Information concerning the borehole construction

a. The Contractor shall ensure that the drilling rig to be used must have the capability of drilling beyond the anticipated depth by 30%.

b. Drill hole to suit 14" Surface Casing, drill depth minimum 6m dependant on strata encountered, and cement grouted full length back to surface to prevent surface water contamination entering the aquifer.

c. Continue to drill a pilot hole (air drilling using air compressor) with diameter 150 **mm (6')** from 0 to a maximum depth of 75 m; once the well logging show potential water then enlargement of pilot hole to 121½ inches hole to suit final designated 8" (200mm) casing. from 0 m to 75m before casings installation. The casings to be used are of 200 **mm (8'')** in diameter PN9 Class.

d. Construction of the borehole will be undertaken in accordance with accepted practices and will be supervised by the IPG team. It is the duty of the Contractor to inform the IPG in time as to when the commencement of the drilling will be, for IPG

to organize for supervision. IPG will have the final authority in making technical decisions to the Contractor.

e. Cuttings (min. 500 grams) of the strata penetrated shall be collected on site at every 2- meter interval; whichever gives the smallest interval and when required by IPG supervisor, by whatever method is standard for the drilling technique in use and approved by the Supervisor. The Contractor shall take every possible precaution to guard against cutting contamination. Representative lithological samples shall be packed in sealed containers and with clear marked labels covering the borehole location, number and depth interval. The samples shall be stored in a location where they will not be contaminated by site conditions or drilling operations. Furthermore, all the relevant information and drilling velocity, well casing and other well construction operations will be recorded.

f. For each rock sample that has not been taken the Contractor will be fined a penalty amounting to 1 per cent of the total value of the well and this will be deducted from the final payment. If the total amount of samples not taken is more than 15% of the specified number, the well should be started again and IPG will not make any payments for this additional work.

g. The Contractor will be required to complete the log forms for the borehole.

h. The Contractor shall ensure that the materials supplied are of good quality, adhering to the specifications provided in this ToRs and in the BoQ. IPG will not authorize the installation or utilization of any material that is not in line with the requirements established in the ToR and BoQ.

i. The selected Contractor will supply and install UPVC, drinking water standards, non-toxic plain casings with a 200 **mm (8'')** internal diameter PN9 Class for total depth of well except where screen casings are installed. The Contractor should ensure verticality of the casing installed. The quantity/length of screen casings to be installed in the borehole will vary respectively to the aquifer formations.

j. The Contractor will collect 2 litres sample in a clean plastic bottle from the borehole for reference to a competent Water Testing Authority or recognized Water Testing Laboratory for full physical, chemical and bacteriological analysis of the water to ascertain its suitability for human consumption.

k. After drilling pilot hole, Contractor will conduct well logging from bottom to top and will compare to the cutting samples. If the result indicates groundwater position, IPG will purpose to Contractor for reaming then Both Parties will discuss screen position in this stage.

l. The Contractor will provide the Borehole Completion report immediately upon completion of the drilling work. The Borehole Completion Record will also be accompanied by Water quality certificates capturing bacteriological, chemical and physical water qualities.

3.2. Casings and diameters

- The drilling of the borehole will be carried out according to the characteristics specified in this ToR and appendix of the specifications (BoQ), using the proper drilling tools, drive pipes, casing pipes with centralizers to ensure that the casing string is central within the hole, sanitary protection (seals) should isolate the aquifers from other formations, which are considered improper for the exploitation of wholesome water.

- The Contractor will supply all casings and screens of 200 **mm (8'')** diameter including plain casing and screens.

4. Developments and Test Pumping

4.1 Development

After packing is complete, the well will be developed by air-lifting, alternating continuous and surging. During well development, the position of the air outlet (bottom of the drill pipe if drilling apparatus is used for air-lifting) shall be in the blind casing below the lowest screen casing and the Contractor shall ensure that the casing string is adequately supported at the top if necessary and is not damaged. Any casing and/or screen damage during installation and well development shall be the responsibility of the Contractor, who shall make the necessary corrections/repairs without additional cost to the IPG. Development will be considered complete only when less than 5 Nephelometric Turbidity Unit (NTU) of suspended solids remains in the water. It is recommended that flushing be done for a minimum of 4 hours.

4.2. Test Pumping

a. The Contractor shall supply and install GRUNDFOS pumps for lifting water beyond 45 m with all the components including GI rising pipe, the handle assembly, the pedestal, the pump head assembly, connecting rods and rising mains, pump cylinder. The maximum expected yield is 10 L/sec.

b. Step draw down pumping test should be conducted by the Contractor for considering 4 steps with different yield (Qmx/2, Qmx/3, and Qmx/5) and a recovery step. Each test should last a minimum of 1 hour. In addition, 24 hours constant pump test should be conducted by the Contractor using the optimal yield identified during the step draw down test. Recovery test will be for one hour or such time when there is at least recovery of 80% of the static water level noted at the start of the pump test. Step draw down, constant pump test and recovery data should be reported on the logarithmic timescale and should contain at least: Date of Test (Day, Month, Year); Depth of BH at time of test (m); Static Water Level (SWL) before test (m); Type of Pump used; Depth of Pump Intake (m); Discharge (Ltrs/Minute); Dynamic/Pumping water level (m). IPG's supervisory staff should be informed, in writing (email), at least 24hr before the scheduled time for

carrying out of the pumping test. The procedure should be discussed and agreed by both parties (IPG and Contractor) before the Contractor could initiate the pumping test.

c. The Contractor will provide all necessary elements for this purpose which include provision of all necessary implements and pumping equipment i.e. weirs, pipes, gauges etc for the proper measurement of discharge rates and water levels and disposal of extracts.

4.3. Well plumpness and alignment

4.3.1. Tests.

The borehole should be tested for plumpness and alignment by means of minimum a 4 meter long, and perfectly straight, UPVC pipe with 7 mm of minimum thickness that should be introduced along the whole borehole.

4.3.2. Minimum Requirements

Such a test pipe, as described above should easily move through the whole borehole. The loss of plumpness of the well's axis should never be more than 2/3 of the smaller inside diameter of the casing. If these minimum requirements are not met by the well, the Contractor will be required to correct the defects, otherwise IPG will reject the borehole and no payments will be made for its drilling and completion. This test should normally be done before pump testing the well in the presence of the IPG team.

4.5. Protection of water quality and sampling

4.5.1. Borehole Protection

The Contractor will take maximum care to avoid the physical, chemical or bacteriological contamination of the borehole water, during the construction and after construction operations. In any case, where water is polluted due to the Contractors neglect, he will be obliged to carry out all the necessary operations, at his own cost, in order to rectify such pollution of the borehole.

4.5.2. Water samples

The Contractor will take two (2) bags samples for laboratory analysis, after completion of test pumping. One sample will be used for each of these tests; bacteriological, physical and chemical analysis, which should be collected in clean, sterilized properly sealed and protected plastic containers. The samples so collected should reach the authorized BEE – TL Water Testing Laboratories, within 24 hours from the time of collection from the borehole.

4.5.3. Particle Content in Pumped Water

The water drawn out of the well will be acceptable if it has a sand particle content of less than 5 milligrams per cubic metre. In case this allowed maximum limit is not met, the Contractor will make all necessary adjustments to the well structure, at his own expense, in order to meet these specifications.

4.6. Finishing Works

4.6.1 Temporary Lid

The Contractor will pay close attention to the due protection of the mouth of the borehole against the entrance of water or any other pollutants while drilling or after the completion of the borehole. For this purpose, the Contractor will provide a lid to be placed on the mouth of the well at any time the drilling rig is not in operation. This lid will be welded into place after

the drilling has been completed. Specifications related with wellhead construction, installation of pumps have been indicated in the Specifications and Bill of Quantities Part.

5. Role of the Contractor

a. The Contractor shall carry out the works in accordance with the Bills of Quantities provided, tendered and accepted, a copy of which is attached.

b. The Contractor will have to provide for the construction and completion in every detail of the work described in the contract and contractual documents such as ToRs and annexes. All labours, materials, tools, equipment, transportation, food and supplies required to complete the work in accordance with the specifications and terms of the contract should have to be well furnished. The Contractor cannot deviate from the construction designs or specifications without seeking for permission and approval from IPG.

c. If the Contractor is not able to finish the drilling or has to abandon the borehole due to loss of tools, accidents or any unforeseeable circumstances, the Contractor should remove the casings or drive pipes already in the hole and refill it with clay or concrete. All materials extracted from the hole, after refilling it will be the property of the Contractor. IPG will not pay for any of the work carried out, and will authorize in advance the drilling of a new hole, at a site near the abandoned one if need be, at the Contractor's expenses.

d. The Contractor will make all the necessary arrangements for accommodation and food for the drilling team. Foodstuffs and other consumables (Fuels and Lubricants) will have to be transported to site at the Contractor's own expense. Potable and make up water is available within the drilling site. The transport of the water to the drilling site will be the responsibility of the Contractor.

e. For the field expenses, IPG will not be held responsible for any expenses incurred by the Contractor or its agents during the executions of this ToR.

6. Health and Safety

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

Under this contract, the Contractor's team leader has the obligation and responsibility to safeguard the safety and security of its Personnel, the drilling crew's equipment and other property. Furthermore, the Contractor's team leader shall develop a security plan in consultation with IPG, including detailed procedures to cover evacuation, personnel, equipment and unlawful interference.

7. Requirements of the Contractor for the tender

a. Experience:

For a Contractor to be accepted to participate in the tender process, must provide evidence (satisfactory report completion) of at least 6 boreholes drilled in Timor-Leste with other NGOs or government amounting to a total value of 100,000 USD during the last 6 years. At least 3 contract contracts should be for an amount of 15,000 USD. The scope in the report should clearly mention drilling and are not valid for this purpose auger manual drilling.

b. Equipment and work force:

The Contractor should present a list of the drilling equipment that is going to execute for the contract, specifying the following: Name; Model; Quantity; Year of manufacturing. All equipment listed should be in perfect operational conditions and if changes are required during the execution of the contract, an equipment of similar characteristics needs to be put in place and IPG has to be informed in written. The Contractor must provide a list of the workforce that it intends to use for execution of the project.

c. Time for completion.

7.1. The Contractor should perform the activity in a maximum period of 60 days after the signature of the contract. For the tender process, the Contractor should submit a work schedule (project Grant chart) aligning activities to match the completion period. Any bid which schedule goes beyond the project estimated completion period of 60 days will not be accepted in the tender process. In the case of delays in the implementation process of the project, penalties will follow with immediate effect and the penalty criteria will be stipulated on the contract document. The works are therefore expected to be completed within a period of 60 days to enable the Contractor hand over the project to the IPG.

d. Legal documents from the government of Timor-Leste

The Contractor must present a copy of the valid drilling certificate; a copy of the company's registry in the Timor-Leste's Ministry of Legal Affairs and a copy of the trading license.

e. Bidding amount.

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

8. Defect liability period

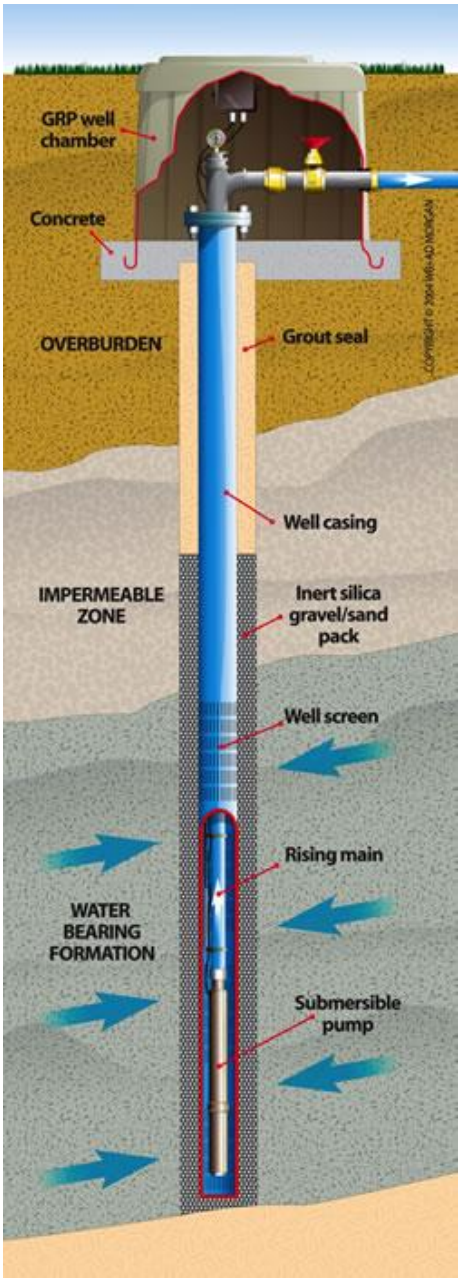
The borehole will be guaranteed for a period of 6 months after completion. In an event that there are defects found on the borehole within the 6 months' period, the Contractor will be notified and authorized to correct all the said defects before the Contractor is paid the retention amount.

9. Technical Specifications

Drilling of one Borehole in Samalaku Liba Area, Buibau Vilage

No	DESCRIPTION	UNIT	QTY
A	**PREPARATION SERVICES**	NOTES	
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1
2	Erecting and dismantling of drilling rig unit at the site	sum	1
B	**CONSTRUCTION WORKS**		
3	Drill hole to suit 14" Surface Casing, drill depth minimum 6 m dependent on strata encountered, and cement grouted full length back to surface to prevent surface water contamination entering the aquifer.	m	6
4	Air Drilling 6" Pilot Hole utilizing compressor	m	75
5	Drilling should be all in price, inclusive of drilling fluids		
6	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES	
7	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	75
8	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 12 – 1/2" inches hole to suit final designated 8" casing.	m	75
9	Supply and installation of 200 mm diameter UPVC Casing, UPVC PN9	m	63
10	Supply and installation of 200 mm Machine Slotted UPVC Bore Screen PN12, aperture 1.5 mm / 2 mm	m	12
11	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	75
12	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)		
13	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development (If required).		
14	Bore completion concrete slab dimension 100 cm x 100 cm x	sum	1

	30 cm thick with fixed alloy name& construction plate screw on to cement slab		
C	**PUMP TEST**		
15	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4
16	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24
17	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	2
18	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole	set	1
19	Data analysis, drilling & pumping test report	set	1
20	Supervision of borehole drilling and completion	sum	1
21	Final Completion Report: 3x Hard Copies plus Soft Copy	set	1
D	**PUMP SET**		
22	Supply and install of Submersible Pump, equivalent with Grundfos SP46 – 11 expected flow is 9 – 10 LPS with total head 100 meters. 3 Phase, DOL Start	complete set	1
23	Control Panel All Weatherproof Junction Box, enclosure Manual ON/OFF Auto Switch, Voltmeter Lamp, Current No Selector, Lamp Indicators for RST, Dry 2 Running Protector No Fault Lamp Indicator, Diagram Connection to Panel.	set	1
24	Poly Pipe 90 mm diameter 55 meters	set	
25	Well Head Assembly complete with No Flow Protection Switch, Non-Return Valve, 0-12 kg/cm 2 Pressure Gauge, Gate Valve, Water Meter, Double Action Air Valve and assorted fittings	set	1
26	All materials supplied and installed		



An example of expected result for Buibau Drilling

Section V. Bidding Forms

Table of Forms

Technical Bid Submission Sheet **2**

Price Bid Submission Sheet ..... Error! Bookmark not defined.

PRICE SCHEDULE **10**

Technical Bid Submission Sheet

Date: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda No.:_____

(b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section VI, Schedule of Supply, the following Goods and Related Services: **Supply of Drill Borehole to the Instituto do Petróleo e Geologia – Instituto Público (IPG)**

(c) Our Bid shall be valid for a period of **Ninety (90)** days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of **five percent (5%)** of the Contract Price for each LOT we Bid for the due performance of the Contract;

(e) We are participating, as Bidders, in more than one Bid for LOT:.....in this bidding process, other than alternative offers in accordance with the Bidding Document; or We are not participating, as Bidders, in more than one Bid and bid for 1 LOT only LOT:.....in this bidding process, other than alternative offers in accordance with the Bidding Document

(f) We are not subject to current sanctions or declaration of ineligibility for fraud and corruption by the Purchaser;

(g) We do not have a conflict of interest with one or more parties participating in or executing this bidding process;

(h) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Purchaser;

(i) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

DESCRIPTION OF APPROACH, METHODOLOGY, AND WORK PLAN IN RESPONDING TO THE TERMS OF REFERENCE

A description of the approach, methodology, and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for training, if the Terms of Reference specify training as a specific component of the assignment.

{Suggested structure of your Technical Proposal}

a) ***Technical Approach, Methodology, and Organization of the Consultant's team***. {Please explain your understanding of the objectives of the assignment as outlined in the Terms of Reference (TOR), the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s); the degree of detail of such output; and describe the structure and composition of your team. Please do not repeat/copy the TORs in here.}

b) ***Work Plan and Staffing***. {Please outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan and work schedule showing the assigned tasks for each expert. A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan should be consistent with the Work Schedule Form.}

c) ***Comments (on the TOR)***

{Your suggestions should be concise and to the point, and incorporated in your Proposal. Please also include comments, if any, on the ToR}

WORK SCHEDULE AND PLANNING FOR DELIVERABLES

Form TECH-1

N°	Deliverables [1] (D-..)	Months											
		1	2	3	4	5	6	7	8	9	.....	n	TOTAL
D-1	{e.g., Deliverable #1: Report A												
	1) data collection												
	2) drafting												
	3) inception report												
	4) incorporating comments												
	5)												
	6) delivery of final report to Employer}												
D-2	{e.g., Deliverable #2:.....}												
n													

1 List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Employer's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.

2 Duration of activities shall be indicated in a form of a bar chart.

3. Include a legend, if necessary, to help read the chart.

Form TECH-2

CURRICULUM VITAE (CV)

[This CV format should be followed. CV not in required format will get a zero rating.]

Position Title and No.	{e.g., K-1, TEAM LEADER}
Name of Expert:	{Insert full name}
Date of Birth:	{day/month/year}
Citizenship:	

Education: {List college/university or other specialized education, giving names of educational institutions, dates attended, degree(s)/diploma(s) obtained}

_____

_____

Employment record relevant to the assignment: {Starting with present position, list in reverse order. Please provide dates, name of employing organization, titles of positions held, *type of employment (full time, part time, contractual),* types of activities performed and location of the assignment, and contact information of previous Employers and employing organization(s) who can be contacted for references. Past employment that is not relevant to the assignment does not need to be included.}

Period	**Employing organization and your title/position. Contact information for references**	**Country**	**Summary of activities performed relevant to the Assignment**
[e.g., May 2005-present]	[e.g., Ministry of ……, advisor/consultant to… For references: Tel……/e-mail……; Mr. Bbbbbb, deputy minister]		

Membership in Professional Associations and Publications: _____

Language Skills (indicate only languages in which you can work): _____

_____

Certification:

I, the undersigned, certify to the best of my knowledge and belief that

This CV correctly describes my qualifications and experience

I confirm that I will be available to carry out the assignment for which my CV has been submitted in accordance with the implementation arrangements and schedule set out in the Proposal.

I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

_____ Date: _____

[Signature of expert or authorized representative of the firm] *Day/Month/Year*

Full name of authorized representative: _____

All person involved in the proposal must complete and signed the CV

Form TECH-3

Relevant previous experience				
Name of previous contracts	**Client contact details and reference including email**	**Contract Value**	**Periode of the activity**	**Types of activities carried out**

Price Bid Submission Sheet

Date: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda No.:_____

(b) We offer to provide services in conformity with the Bidding Document and in accordance with the delivery schedule specified in Section V, Schedule of Supply, for:
Supply of Drill Borehole to the Instituto do Petróleo e Geologia – Instituto Público (IPG)

(c) The total price of our Bid, excluding any discounts offered in item (d) below is: _____

(d) The discounts offered and the methodology for their application are: _____
_____

(e) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

(f) We agree to permit the Purchaser or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by Purchaser.

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

PRICE SCHEDULE

No	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	70		
5	Cutting samples 0.5Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70		
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58		
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12		
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	70		
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.				
11	Bore cleaning & development (works including de-mudding operation, bore development air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1		

	SUB TOTAL II				
C	PUMP TEST				
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step				
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)				
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)				
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole				
17	Supervision of borehole drilling and completion				
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)				
	SUB TOTAL III				
	TOTAL DRILLING CONSTRUCTION				
D	PUMP SET				
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63mm blue line poly pipe 40 – 45 m				
20	Inclusive of Control Panel				
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				
22	Inclusive of Well Head installation with 6" flange				
23	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

2. Supply of drill 1 borehole in Mehara village, Administrative post of Tutuala, Lautem municipality

No	DESCRIPTION	UNIT	UNIT	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	Sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6 m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Air Drilling 6" pilot hole utilizing compressor	m	85		
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	85		
7	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing.	m	85		
8	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	73		
9	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12		
10	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	85		

11	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)				
12	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor, disinfection). The water shall be free of sand particles at the end of well development (If required)	hours	4		
13	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	sum	1		
	SUB TOTAL II				
C	PUMP TEST				
14	Step – Drawdown Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4		
15	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24		
16	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	1		
17	Collect Water Sampling & laboratory for chemical and bacteriological analysis of the borehole	set	1		
18	Data analysis, drilling & pumping test report	set	1		
19	Supervision of borehole drilling and completion	sum	1		
20	Final Completion Report: 3x Hard Copies plus Soft Copy	set	1		
	SUB TOTAL III				
D	**PUMP SET**				
21	Supply and installation of Submersible Pump equivalent with Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m	set	1		
22	Inclusive of Control Panel				

23	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				
24	Inclusive of Well Head installation with 6" flange				
25	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

3. Supply of drill 1 borehole in Vemase village, Administrative post of Vemase, Baucau municipality

No	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Drilling 8 –1 /2 " diameter hole to suit final designated 6" casing.	m	70		
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70		
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58		
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12		
9	Supply & install GS DN 1"piezometer, Cap BSP on top.	m	70		

	Sounding pipe connect to casing 40 cm from top of flange.				
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.				
11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1		
	SUB TOTAL II				
C	**PUMP TEST**				
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step				
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)				
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)				
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole				
17	Supervision of borehole drilling and completion				
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)				
	SUB TOTAL III				
	TOTAL DRILLING CONSTRUCTION				
D	**PUMP SET**				
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m				
20	Inclusive of Control Panel				
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				

22	Inclusive of Well Head installation with 6" flange				
23	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

4. Supply of drill 1 borehole in Fatulia village, Administrative post of Venilale, Baucau Municipality

No	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	Sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6 m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Air Drilling 6" pilot hole utilizing compressor	m	75		
5	Cutting samples 0.5Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	75		
7	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 8½ inch hole to suit final designated 6" casing.	m	75		
8	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	63		

9	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12		
10	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	75		
11	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)				
12	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development (If required)	hours	4		
13	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	sum	1		
	SUB TOTAL II				
C	PUMP TEST				
14	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4		
15	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24		
16	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	1		
17	Collect Water Sampling & laboratory test for chemical and bacteriological analysis of the borehole	set	1		
18	Data analysis, drilling & pumping test report	set	1		
19	Supervision of borehole drilling and completion	sum	1		
20	Final Completion Report: 3 x Hard Copies plus Soft Copy	set	1		
	SUB TOTAL III				
D	**PUMP SET**				
21	Supply and installation of Submersible Pump equivalent with	set	1		

	Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m				
22	Inclusive of Control Panel				
23	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				
24	Inclusive of Well Head installation with 6" flange				
25	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

5. Supply of drill 1 borehole in Matai village, Administrative post of Mau-Catar, Covalima Municipality

No	DESCRIPTION	UNIT	QTY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	60		
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	60		
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	48		
8	Supply and installation of 150mm Machine Slotted UPVC Bore Screen, PN12, aperture 1.5 mm / 2 mm. The slot opening of the screen shall be based on the sieve analysis of soil samples.	m	12		

9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	60		
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.				
11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1		
	SUB TOTAL II				
C	**PUMP TEST**				
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step				
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)				
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)				
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole				
17	Supervision of borehole drilling and completion				
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)				
	SUB TOTAL III				
	TOTAL DRILLING CONSTRUCTION				
D	**PUMP SET**				
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30 – 8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m				
20	Inclusive of Control Panel				
21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				
22	Inclusive of Well Head installation with 6" flange				
23	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

6. Supply of drill 1 borehole in Ailok Laran village, Administrative post of Dom Aleixo, Dili Municipality

No	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**				
1	Mobilization – Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	Sum	1		
2	Erecting and dismantling of drilling rig unit at the site	Sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 8" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as seal to prevent contamination to the aquifer.	M	6		
4	Drilling 6 – 3/4"hole to suit final designated 100mm casing	M	65		
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	M	65		
7	Supply and installation of 100 mm diameter UPVC Casing, UPVC PN9	M	53		

8	Supply and installation of 100 mm Machine Slotted UPVC Bore Screen PN 9, apertures 1.5 mm / 2 mm	M	12		
9	Supply & install 3/4" piezometer	M	65		
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.				
11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name & construction plate screw on to cement slab	Sum	1		
	SUB TOTAL II				
C	**PUMP TEST**				
13	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	4		
14	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole	Set	1		
15	Supervision of borehole drilling and completion	Sum	1		
16	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, testing report and project photos)	Set	1		
	SUB TOTAL III				
D	**PUMP SET**				

17	Supply and installation of one Submersible Pump equivalent with Grundfos 1.5 LPS Pump 1.1 kW Motor, Single Phase 240V complete with 45 meters of 32mm poly pipe and Electrical Cable Components. Well Head fitted with 0/800 Pressure Gauge; Gate Valve all incorporated into common Manifold. System is automatic start/stop using pressure switch, pressure cell.	Set	1		
	SUB TOTAL IV				
	TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

7. Supply of drill 1 borehole in Atabae village, Administrative post of Atabae, Bobonaro Municipality

No	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drilling hole to suit 10" Temporary Surface Casing to approximately 6m depth dependent on strata in counted, and cement grouted full length back to surface. Once the cement dry, pull out the temporary surface casing and leave the cement as sanitary seal to prevent contamination to the aquifer.	m	6		
4	Drilling 8 – 1/2" diameter hole to suit final designated 6" casing.	m	70		
5	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
6	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity.	m	70		
7	Supply and installation of 150 mm diameter UPVC Casing, UPVC PN9	m	58		
8	Supply and installation of 150 mm Machine Slotted UPVC Bore Screen, PN 12, aperture 1.5 mm / 2mm. The slot opening of the	m	12		

	screen shall be based on the sieve analysis of soil samples.				
9	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40cm from top of flange.	m	70		
10	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum.				
11	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development.	hours	4		
12	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab.	sum	1		
	SUB TOTAL II				
C	**PUMP TEST**				
13	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step				
14	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (drawdown and recovery measurement)				
15	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)				
16	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole				
17	Supervision of borehole drilling and completion				
18	Final Completion Report: 3x Hard Copies plus Soft Copy (data analysis, drilling, pump testing report, project photos)				
	SUB TOTAL III				
	TOTAL DRILLING CONSTRUCTION				
D	**PUMP SET**				
19	Supply and installation of Submersible Pump equivalent with Grundfos SP30-8, 100 meters head, capacity 5 LPS, 7.5 kW Motor complete with electrical drop cable, stainless steel safety cable, 63 mm blue line poly pipe 40 – 45 m				
20	Inclusive of Control Panel				

21	Inclusive of Well Head Manifold 3"diameter: Check Valve, Gate Valve, Water Meter				
22	Inclusive of Well Head installation with 6" flange				
23	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

8. Supply of drill 1 borehole in Buibau Village, Administrative post of Baucau Vila, Baucau Municipality

No	DESCRIPTION	UNIT	QTY	UNIT PRICE (US$)	TOTAL PRICE (US$)
A	**PREPARATION SERVICES**	NOTES			
1	Mobilization-Demobilization Drilling Rig, Equipment, Consumables, Personnel and Set Up, Site Clean Up on completion	sum	1		
2	Erecting and dismantling of drilling rig unit at the site	sum	1		
	SUB TOTAL I				
B	**CONSTRUCTION WORKS**				
3	Drill hole to suit 14" Surface Casing, drill depth minimum 6 m dependent on strata encountered, and cement grouted full length back to surface to prevent surface water contamination entering the aquifer.	m	6		
4	Air Drilling 6" Pilot Hole utilizing compressor	m	75		
5	Drilling should be all in price, inclusive of drilling fluids				
6	Cutting samples 0.5 Kg every 2 m (every change of rock formation).	NOTES			
7	Set up, calibrate and conduct down hole logging to obtain self-potential SP & R from bottom to top. The selected contractor should report to IPG prior to conduct further activity. Once the logging result showing there is potential water aquifer in the hole, then continue to further step to convert the hole into production well	m	75		
8	Conversion of the borehole into a groundwater well including enlargement of pilot hole to 12 – 1/2" inches hole to suit final designated 8" casing.	m	75		
9	Supply and installation of 200 mm diameter UPVC Casing, UPVC PN9	m	63		
10	Supply and installation of 200 mm Machine Slotted UPVC Bore Screen PN12, aperture 1.5 mm / 2 mm	m	12		

11	Supply & install GS DN 1"piezometer, Cap BSP on top. Sounding pipe connect to casing 40 cm from top of flange.	m	75		
12	Price should include supply and installation of gravels pack 4 – 6 mm rounded and well sorted along with bentonite pellet seal set one meter thick above the top of last screen at minimum (if required)				
13	Bore cleaning & development (works including de-mudding operation, bore development by air-lift by air compressor). The water shall be free of sand particles at the end of well development (If required).				
14	Bore completion concrete slab dimension 100 cm x 100 cm x 30 cm thick with fixed alloy name& construction plate screw on to cement slab	sum	1		
	SUB TOTAL II				
C	**PUMP TEST**				
15	Step-Draw Down Test 4 steps at 50%, 75%, 100% and 120% from yield, one hour per-step	hours	4		
16	Pumping Test Constant Rate Test, including installation and removal of pumping test equipment (draw down and recovery measurement)	hour	24		
17	Recovery Test for One Bore Hole (End of Step Test & End of Constant Rate)	hour	2		
18	Collect water sample & laboratory test for chemical and bacteriological analysis of the borehole	set	1		
19	Data analysis, drilling & pumping test report	set	1		
20	Supervision of borehole drilling and completion	sum	1		
21	Final Completion Report: 3x Hard Copies plus Soft Copy	set	1		
	SUB TOTAL III				
D	**PUMP SET**				
22	Supply and install of Submersible Pump, equivalent with Grundfos SP46 – 11 expected flow is 9 – 10 LPS with total head 100 meters. 3 Phase, DOL Start	complete set	1		
23	Control Panel All Weatherproof Junction Box, enclosure Manual ON/OFF Auto Switch, Voltmeter Lamp, Current No Selector, Lamp Indicators for RST, Dry 2 Running Protector No Fault Lamp Indicator, Diagram Connection to Panel.	set	1	inclusive	
24	Poly Pipe 90 mm diameter 55 meters	set		inclusive	
25	Well Head Assembly complete with No Flow Protection Switch, Non-Return Valve, 0-12 kg/cm 2 Pressure Gauge, Gate Valve, Water	set	1	inclusive	

	Meter, Double Action Air Valve and assorted fittings				
26	All materials supplied and installed				
	SUB TOTAL IV				
	GRAND TOTAL DRILLING CONSTRUCTION & WELL PUMP SYSTEM PACKAGE				

SUMMARY OF COST

Supply of Drill Borehole to the Instituto do Petróleo e Geologia – Instituto Público (IPG)	
Description	**Bid Prices ($)**
Supply of drill 1 borehole in Betano village, Administrative post of Same, Manufahi municipality	
Supply of drill 1 borehole in Mehara village, Administrative post of Tutuala, Lautem municipality	
Supply of drill 1 borehole in Vemase village, Administrative post of Vemase, Baucau municipality	
Supply of drill 1 borehole in Fatulia village, Administrative post of Venilale, Baucau Municipality	
Supply of drill 1 borehole in Matai village, Administrative post of Mau-Catar, Covalima Municipality	
Supply of drill 1 borehole in Ailok Laran village, Administrative post of Dom Aleixo, Dili Municipality	
Supply of drill 1 borehole in Atabae village, Administrative post of Atabae, Bobonaro Municipality	
Supply of drill 1 borehole in Buibau Village, Administrative post of Baucau Vila, Baucau Municipality	
TOTAL BID PRICES	

Section VI - General Conditions of Contract

Table of Clauses

1. Definitions 2
2. Contract Documents 3
3. Corrupt Practices 3
4. Interpretation 4
5. Language 5
6. Joint Venture, Consortium or Association 5
7. (Not Applicable) 6
8. Notices 6
9. Governing Law 6
10. Settlement of Disputes 6
11. Scope of Supply 6
12. Delivery 6
13. Supplier's Responsibilities 6
14. Purchaser's Responsibilities 7
15. Contract Price 7
16. Terms of Payment 7
17. Taxes and Duties 7
18. Performance Security 7
19. Copyright 8
20. Confidential Information 8
21. Subcontracting 9
22. Specifications and Standards 9
23. Packing and Documents 10
24. Insurance 10
25. Transportation 10
26. Inspections and Tests 10
27. Liquidated Damages 12
28. Warranty 12
29. Patent Indemnity 12
30. Limitation of Liability 14
31. Change in Laws and Regulations 14
32. Force Majeure 14
33. Change Orders and Contract Amendments 15
34. Extensions of Time 15
35. Termination 16
36. Assignment 17

1. Definitions 1.1 The following words and expressions shall have the meanings hereby assigned to them:

(a) "Contract" means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(b) "Contract Documents" means the documents listed in the Agreement, including any amendments thereto.

(c) "Contract Price" means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

(d) "Day" means calendar day.

(e) "Delivery" means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.

(f) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(g) "GCC" means the General Conditions of Contract.

(h) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(i) "Purchaser's Country" is the Democratic Republic of Timor-Leste (RDTL).

(j) "Purchaser" means the entity purchasing the Goods and Related Services, as specified in the SCC.

(k) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.

(l) "SCC" means the Special Conditions of Contract.

(m) "Subcontractor" means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to

whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

(n) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.

(o) "The Site," where applicable, means the place named in the SCC.

2. Contract Documents

2.1 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Corrupt Practices

3.1 The Purchaser requires Suppliers to observe the highest standard of ethics during the procurement and execution of this contract. In pursuance of this policy, the Purchaser:

(a) defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party.

(b) will reject a proposal for award if it determines that the bidder recommended for award has, directly or through an

agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract; and

(c) will sanction a party or its successor, including declaring ineligible, either indefinitely or for a stated period of time, to participate in government contracts if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices.

3.2 The Supplier shall permit the Purchaser to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the Purchaser, if so required by the Purchaser

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

(a) The meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.

(b) EXW, CIF, CIP, and other similar terms, shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce at the date of the Invitation for Bids or as specified in the SCC.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language specified in the SCC. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture, Consortium or Association

6.1 Unless otherwise specified in the SCC, if the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

7. (Not Applicable)

8. Notices

8.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the SCC. The term "in writing" means communicated in written form with proof of receipt.

8.2 A Notice shall be effective when delivered or on the Notice's effective date, whichever is later.

9. Governing Law

9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser's country, unless otherwise specified in the SCC.

10. Settlement of Disputes

10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

10.2 If the parties fail to resolve such a dispute or difference by mutual consultation within twenty-eight (28) days from the commencement of such consultation, either party may require that the dispute be referred for resolution to the formal mechanisms specified in the SCC.

11. Scope of Supply

11.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section VI, Schedule of Supply.

11.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.

12. Delivery

12.1 Subject to GCC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section VI, Schedule of Supply. The details of shipping and other documents to be furnished by the Supplier are specified in the SCC.

13. Supplier's Responsibilities

13.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 11, and the Delivery and Completion Schedule, as per

GCC Clause 12.

14. Purchaser's Responsibilities

14.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from local public authorities, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.

14.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Sub-Clause 14.1.

15. Contract Price

15.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions therefrom, as may be made pursuant to the Contract.

15.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.

16. Terms of Payment

16.1 The Contract Price shall be paid as specified in the SCC.

16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC Clause 12 and upon fulfillment of all the obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Purchaser, no later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.

16.4 The currency or currencies in which payments shall be made to the Supplier under this Contract shall be specified in the SCC.

17. Taxes and Duties

17.1 The Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until final delivery of the contracted Goods to the Purchaser.

18. Performance Security

18.1 The Supplier shall, within fourteen (14) days of the notification of Contract award, provide a Performance Security for the due performance of the Contract in the amounts and currencies specified in the SCC.

18.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

18.3 The Performance Security shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.

18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in the SCC.

19. Copyright

19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

20. Confidential Information

20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 20.

20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.

20.3 The obligation of a party under GCC Sub-Clauses 20.1 and

20.2 above, however, shall not apply to information that:

(a) now or hereafter enters the public domain through no fault of that party;

(b) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(c) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

20.4 The above provisions of GCC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

20.5 The provisions of GCC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.

21. Subcontracting

21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

21.2 Subcontracts shall comply with the provisions of GCC Clauses 3 and 7.

22. Specifications and Standards

22.1 Technical Specifications and Drawings

(a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) The Goods and Related Services supplied under this Contract shall conform to the standards mentioned in Section VI, Schedule of Supply and, when no applicable standard is mentioned, the standard shall be equivalent or

superior to the official standards whose application is appropriate to the country of origin of the Goods.

22.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section VI, Schedule of Supply. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 33.

23. Packing and Documents

23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.

23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

24. Insurance

24.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC.

25. Transportation

25.1 Unless otherwise specified in the SCC, the Supplier shall be responsible for all necessary transporatation to deliver the Goods to the specified delivery points.

26. Inspections and Tests

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections VI, Schedule of Supply.

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in the Purchaser's country as specified in the SCC. Subject to GCC

Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 26.4.

26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the

Contract.

27. Liquidated Damages

27.1 Except as provided under GCC Clause 32, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each day of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 35.

28. Warranty

28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

28.2 Subject to GCC Sub-Clause 22.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

28.3 Unless otherwise specified in the SCC, the warranty shall remain valid for 12 months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for 18 months after the date of shipment or loading in the country of origin, whichever period concludes earlier.

28.4 The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

28.5 Upon receipt of such Notice, the Supplier shall expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims,

demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design,

trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

30. Limitation of Liability

30.1 Except in cases of gross negligence or willful misconduct :

(a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the SCC, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Supplier to indemnify the Purchaser with respect to patent infringement.

31. Change in Laws and Regulations

31.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 15.

32. Force Majeure

32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

32.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

33. Change Orders and Contract Amendments

33.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

(b) the method of shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

34. Extensions of

34.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding

Time

timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 12, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause.

34.2 Except in case of Force Majeure, as provided under GCC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 27, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

35. Termination

35.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 34; or

(ii) if the Supplier fails to perform any other obligation under the Contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

(c) if the Supplier, in the judgment of the Purchaser has engaged in corrupt, fraudulent, collusive, or coercive practices, as defined in GCC Clause 3, in competing for or in executing the Contract.

35.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or

remedy that has accrued or will accrue thereafter to the Purchaser.

35.3 Termination for Convenience

(a) The Purchaser, by Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

(i) To have any portion completed and delivered at the Contract terms and prices; and/or

(ii) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

36. Assignment

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

Section VII. 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.

GCC 1.1(k)	The Purchaser is: **Institute of Petroleum and Geology – Public Institute (IPG) on behalf of the Government of the Democratic Republic of Timor-Leste**
GCC 5.1	The language shall be: **Portuguesse/Tetum/English**
GCC 6.1	The firms or firms in a joint venture, consortium or association shall be jointly and severally liable.
GCC 8.1	For **notices**, the Purchaser's address shall be: **Institute of Petroleum and Geology – Public Institute (IPG)** **Rua. Delta 1 Aimutin, Comoro, Dili, Timor-Leste** **City: Dili** **Country: Timor-Leste** **Electronic mail address: jsoares@ipg.tl or hfreitas@ipg.tl**
GCC 9.1	The governing law shall be: Law of Timor-Leste
GCC 10.2	The formal mechanism for the resolution of disputes shall be: The dispute shall be referred to adjudication or arbitration in accordance with the laws of Timor-Leste.
GCC 15.2	The price adjustment shall be: **Not Applicable**
GCC 16.1	Payment shall be made in the following manner:
GCC 16.4	The currency for payments shall be: **US Dollars only**
GCC 18.1	The Performance Security shall be in the amount equivalent to **FIVE PERCENT (5%)** of the Contract Price.
GCC 18.3	The types of acceptable Performance Security is: A **BANK GUARANTEE** issued by a bank located in Timor-Leste, in the format included in Section VIII.
GCC 27.1	The daily amount of liquidated damages expressed as a percentage of Contract amount shall be: **0.1 % PERCENT**

GCC 27.1	The maximum amount of liquidated damages shall be: **TEN PERCENT (10%)** of the contract amount.
GCC 28.5	The period for repair or replacement shall be: 10 (ten) working days.

Section VIII. Contract Forms

Table of Forms

Agreement.....2

Performance Security.....3

Advance Payment Security.....4

Agreement

THIS AGREEMENT made the _____ day of _____, _____, between _____of _____ (hereinafter "the Purchaser"), of the one part, and _____ of _____ (hereinafter "the Supplier"), of the other part:

WHEREAS the Purchaser invited bids for certain Goods and Related Services, viz., _____ and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of _____ (hereinafter "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

(a) the Purchaser's Notification to the Supplier of Award of Contract;
(b) the Bid Submission Sheet and the Price Schedules submitted by the Supplier;
(c) the Special Conditions of Contract;
(d) the General Conditions of Contract;
(e) the Schedule of Supply; and
(f) _____.

This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of _____ on the day, month and year indicated above.

Signed by _____ (for the Purchaser)

Signed by _____ (for the Supplier)

Performance Security

[The bank, as requested by the successful Bidder, shall fill in this form in accordance with the instructions indicated]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: *[insert name and Address of Purchaser]*

Date: _ *[Insert date of issue]*

PERFORMANCE GUARANTEE No.: *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that _ *[insert name of Supplier, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[insert date]* with the Beneficiary, for the supply of _ *[insert name of contract and brief description of Goods and related Services]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Applicant, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of*[insert amount in figures]* ()*[insert amount in words]*,[1] upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee shall expire, no later than the …. Day of ……, 2017[2], and any demand for payment under it must be received by us at this office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.

_____

[signature(s)]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

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[1] *The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, and denominated in the currency of the Contract.*

[2] *Refer to GC Clause-18.4*

Advance Payment Security

Date: _____

Contract Name and No. :_____

_____

To: _____

In accordance with the payment provision included in the Contract, in relation to advance payments, _____ (hereinafter called "the Supplier") shall deposit with the Purchaser a security consisting of _____, to guarantee its proper and faithful performance of the obligations imposed by said Clause of the Contract, in the amount of _____.

We, the undersigned _____, legally domiciled in _____ (hereinafter "the Guarantor"), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligor and not as surety merely, the payment to the Purchaser on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding _____ _____.

This security shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until _____, _____.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the security for and on behalf of _____

Date _____