water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

DW106

REQUEST FOR BID

BID NUMBER W11033

Appointment of Contractors for Drilling and Rehabilitation of Boreholes in SA for Three (03) years Term Contract

CLOSING DATE:
24 May 2016

CLOSING TIME:
11:00 am

Compulsory Briefing Session
Date: 05 May 2016
Time: 10h00
Venue: Department of Water and Sanitation
Infrastructure Branch Training Centre
Roodplaat Dam
Pretoria

SUBMIT TENDER DOCUMENT

TO

POSTAL ADDRESS:
DIRECTOR-GENERAL: WATER AND SANITATION
PRIVATE BAG X 313
PRETORIA,0001

OR

TO BE DEPOSIT IN:
THE TENDER BOX AT THE ENTRANCE
OF ZWAMADAKA BUILDING
157 FRANCIS BAARD STREET
(FORMERLY SCHOEMAN STREET)
PRETORIA,0002

TENDERER: (Company address and stamp)

TABLE OF CONTENTS

INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE DWS

BID NUMBER: **W11033** CLOSING DATE: **24 May 2016** CLOSING TIME: **11:00**

DESCRIPTION: **Appointment of Contractors for Drilling and Rehabilitation of Boreholes in SA for Three (03) years Term Contract**

The successful bidder will be required to fill in and sign a written Contract Form (SBD 7).

BID DOCUMENTS MAY BE POSTED TO:
Private Bag x313,
Pretoria,
0001
OR
DEPOSITED IN THE BID BOX SITUATED AT *(STREET ADDRESS)*
Tender Box, Zwamadaka Building
157 Francis Baard Street (Formerly Schoeman),
Pretoria
0001

Bidders should ensure that bids are delivered timeously to the correct address. If the bid is late, it will not be accepted for consideration.

The bid box is generally open 24 hours a day, 7 days a week.

ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS – (NOT TO BE RE-TYPED)

THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2011, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT

THE FOLLOWING PARTICULARS MUST BE FURNISHED
(FAILURE TO DO SO MAY RESULT IN YOUR BID BEING DISQUALIFIED)

NAME OF BIDDER……

POSTAL ADDRESS……

STREET ADDRESS……

TELEPHONE NUMBER CODE……NUMBER……..

CELLPHONE NUMBER……

FACSIMILE NUMBER CODE …… . NUMBER……

E-MAIL ADDRESS……

VATREGISTRATIONNUMBER……

HAS AN ORIGINAL AND VALID TAX CLEARANCE CERTIFICATE BEEN SUBMITTED? (SBD 2) YES or NO

HAS A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE BEEN SUBMITTED? (SBD 6.1) YES or NO

IF YES, WHO WAS THE CERTIFICATE ISSUED BY?

AN ACCOUNTING OFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA)……..…….....☐

A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS);OR……..…….....☐

A REGISTERED AUDITOR ……..……..☐
[TICK APPLICABLE BOX]

(A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE

ARE YOU THE ACCREDITED REPRESENTATIVE
IN SOUTH AFRICA FOR THE GOODS / SERVICES / WORKS OFFERED? YES or NO

[IF YES ENCLOSE PROOF]

SIGNATURE OF BIDDER:……

DATE:……

CAPACITY UNDER WHICH THIS BID IS SIGNED……

TOTAL BID PRICE……TOTAL NUMBER OF ITEMS OFFERED……

ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE MAY BE DIRECTED TO:

Department: **Department of Water and Sanitation**

Contact Person: Mr. Syabonga Ngidi

Tel: 012 336 6611

Fax: 086 459 0176

E-mail address: ngidis@dwa.gov.za

ANY ENQUIRIES REGARDING TECHNICAL INFORMATION MAY BE DIRECTED TO:

Contact Person: Mr Fanus Fourie

Tel: 012 336 7303

E-mail address: fourief@dws.gov.za

TAX CLEARANCE CERTIFICATE REQUIREMENTS

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1 In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

2 SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3 The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.

4 In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5 Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6 Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

Jeyrel:\Mdk416-SBD2 tax clearance

COMPULSORY BRIEFING SESSION ATTENDANCE CERTIFICATE

W 11033: **Appointment of Contractors for Drilling and Rehabilitation of Boreholes in SA for Three (03) years Term Contract**

This certificate serves to confirm that the representative of the below mentioned company attended the compulsory briefing session on 05 May 2016 as required for the above mentioned bid W11033 as issued by the Department of Water and Sanitation.

On behalf of the company

Name of Representative: .....

Bidder Name: .....

Signature: .....

Date:.....

Department of Water and Sanitation confirmation:

Name of official: Syabonga Ngidi

Position: SCM PRACTITIONER

Signature: .....

SCM OFFICIAL STAMP

SBD 4

DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state[1], or persons having a kinship with persons employed by the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid (includes an advertised competitive bid, a limited bid, a proposal or written price quotation). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-

   - the bidder is employed by the state; and/or

   - the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2. **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

2.1 Full Name of bidder or his or her representative: ……

2.2 Identity Number:……

2.3 Position occupied in the Company (director, trustee, shareholder[2], member):

.....

2.4 Registration number of company, enterprise, close corporation, partnership agreement or trust:

……

2.5 Tax Reference Number:……

2.6 VAT Registration Number: ……

2.6.1 The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers must be indicated in paragraph 3 below.

[1]"State" means –

(a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
(b) any municipality or municipal entity;
(c) provincial legislature;
(d) national Assembly or the national Council of provinces; or
(e) Parliament.

[2]"Shareholder" means a person who owns shares in the company and is actively involved in the management of the enterprise or business and exercises control over the enterprise.

2.7 Are you or any person connected with the bidder presently employed by the state? **YES / NO**

2.7.1 If so, furnish the following particulars:

Name of person / director / trustee / shareholder/ member: ……...……
Name of state institution at which you or the person connected to the bidder is employed : ……
Position occupied in the state institution: ……

Any other particulars:
……
……
……

2.7.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector? **YES / NO**

2.7.2.1 If yes, did you attach proof of such authority to the bid document? **YES / NO**

(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.

2.7.2.2 If no, furnish reasons for non-submission of such proof:

……
……
……

2.8 Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months? **YES / NO**

2.8.1 If so, furnish particulars:
……..
……..
……...

2.9 Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with the evaluation and or adjudication of this bid? **YES / NO**

2.9.1If so, furnish particulars.

……...
……..….
……

2.10 Are you, or any person connected with the bidder, aware of any relationship (family, friend, other) between any other bidder and any person employed by the state who may be involved with the evaluation and or adjudication of this bid? **YES/NO**

2.10.1If so, furnish particulars**.**

……
……
……

2.11Do you or any of the directors / trustees / shareholders / members of the company have any interest in any other related companies whether or not they are bidding for this contract? **YES/NO**

2.11.1 If so, furnish particulars:

……
……
……

3 Full details of directors / trustees / members / shareholders.

Full Name	**Identity Number**	**Personal Income Tax Reference Number**	**State Employee Number / Persal Number**

4 DECLARATION

I, THE UNDERSIGNED (NAME)……

CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT. I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

…….. ..……

Signature Date

…… ……

Position Name of bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2011

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

NB: BEFORE COMPLETING THIS FORM, BIDDERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF B-BBEE, AS PRESCRIBED IN THE PREFERENTIAL PROCUREMENT REGULATIONS, 2011.

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1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R1 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R1 000 000 (all applicable taxes included).

1.2 The value of this bid is estimated to exceed/not exceed R1 000 000 (all applicable taxes included) and therefore the 90/10 system shall be applicable.

1.3 Preference points for this bid shall be awarded for:

(a) Price; and
(b) B-BBEE Status Level of Contribution.

1.3.1 The maximum points for this bid are allocated as follows:

		POINTS
1.3.1.1	**PRICE**	**90**
1.3.1.2	**B-BBEE STATUS LEVEL OF CONTRIBUTION**	**10**
	Total points for Price and B-BBEE must not exceed	**100**

1.4 Failure on the part of a bidder to fill in and/or to sign this form and submit a B-BBEE Verification Certificate from a Verification Agency accredited by the South African Accreditation System (SANAS) or a Registered Auditor approved by the Independent Regulatory Board of Auditors (IRBA) or an Accounting Officer as contemplated in the Close Corporation Act (CCA) together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

2. DEFINITIONS

2..1 **"all applicable taxes"** includes value-added tax, pay as you earn, income tax, unemployment insurance
fund contributions and skills development levies;

2.2 **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad -Based Black Economic Empowerment Act;

2.3 "**B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

2.4 **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;

2.5 **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

2.6 **"comparative price"** means the price after the factors of a non-firm price and all unconditional discounts that can be utilized have been taken into consideration;

2.7 **"consortium or joint venture"** means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract;

2.8 **"contract"** means the agreement that results from the acceptance of a bid by an organ of state;

2.9 **"EME"** means any enterprise with an annual total revenue of R5 million or less .

2.10 **"Firm price"** means the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax, which, in terms of the law or regulation, is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;

2.11 **"functionality"** means the measurement according to predetermined norms, as set out in the bid documents, of a service or commodity that is designed to be practical and useful, working or operating, taking into account, among other factors, the quality, reliability, viability and durability of a service and the technical capacity and ability of a bidder;

2.12 **"non-firm prices"** means all prices other than "firm" prices;

2.13 **"person"** includes a juristic person;

2.14 **"rand value"** means the total estimated value of a contract in South African currency, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;

2.15 **"sub-contract"** means the primary contractor's assigning, leasing, making out work to, or employing, another person to support such primary contractor in the execution of part of a project in terms of the contract;

2.16 **"total revenue"** bears the same meaning assigned to this expression in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act and promulgated in the *Government Gazette* on 9 February 2007;

2.17 **"trust"** means the arrangement through which the property of one person is made over or bequeathed to a trustee to administer such property for the benefit of another person; and

2.18 **"trustee"** means any person, including the founder of a trust, to whom property is bequeathed in order for such property to be administered for the benefit of another person.

3. ADJUDICATION USING A POINT SYSTEM

3.1 The bidder obtaining the highest number of total points will be awarded the contract.

3.2 Preference points shall be calculated after prices have been brought to a comparative basis taking into account all factors of non-firm prices and all unconditional discounts;.

3.3 Points scored must be rounded off to the nearest 2 decimal places.

3.4 In the event that two or more bids have scored equal total points, the successful bid must be the one scoring the highest number of preference points for B-BBEE.

3.5 However, when functionality is part of the evaluation process and two or more bids have scored equal points including equal preference points for B-BBEE, the successful bid must be the one scoring the highest score for functionality.

3.6 Should two or more bids be equal in all respects, the award shall be decided by the drawing of lots.

4. POINTS AWARDED FOR PRICE

4.1 THE 90/10 PREFERENCE POINT SYSTEMS

A maximum of 90 points is allocated for price on the following basis:

90/10

$$Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

Ps = Points scored for comparative price of bid under consideration

Pt = Comparative price of bid under consideration

Pmin = Comparative price of lowest acceptable bid

5. Points awarded for B-BBEE Status Level of Contribution

5.1 In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

5.2 Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.

5.3 Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

5.4 A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

5.5 A trust, consortium or joint venture will qualify for points for their B-BBEE status level a unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.

5.6 Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

5.7 A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended sub-contractor is an EME that has the capability and ability to execute the sub-contract

5.8 A person awarded a contract may not sub-contract more than 25% of the value of the contract to another enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contract.

6. BID DECLARATION

6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

7. B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.3.1.2 AND 5.1

7.1 B-BBEE Status Level of Contribution: ……. = ……(maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting Officer as contemplated in the CCA).

8 SUB-CONTRACTING

8.1 Will any portion of the contract be sub-contracted? YES / NO (delete which is not applicable)

8.1.1 If yes, indicate:

(i) what percentage of the contract will be subcontracted?

.....……%

(ii) the name of the sub-contractor?

……..

(iii) the B-BBEE status level of the sub-contractor?

……..

(iv) whether the sub-contractor is an EME? YES / NO (delete which is not applicable)

9 DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of company/firm ..... :

9.2 VAT registration number : .....

9.3 Company registration number ……. :

9.4 TYPE OF COMPANY/ FIRM

- Partnership/Joint Venture / Consortium
- One person business/sole propriety
- Close corporation
- Company
- (Pty) Limited

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

…….. .....
…… .....
…….. .....

9.6 COMPANY CLASSIFICATION

- Manufacturer
- Supplier
- Professional service provider
- Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

9.7 Total number of years the company/firm has been in business? ……

9.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

(i) The information furnished is true and correct;

(ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.

(iii) In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

(iv) If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

(a) disqualify the person from the bidding process;

(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;

(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

(d) restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and

(e) forward the matter for criminal prosecution

WITNESSES:

1. ……

……
SIGNATURE(S) OF BIDDER(S)

2. ……

DATE:……..

ADDRESS:……..

……

……

SBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

1 This Standard Bidding Document must form part of all bids invited.

2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

3 The bid of any bidder may be disregarded if that bidder, or any of its directors have-

a. abused the institution's supply chain management system;
b. committed fraud or any other improper conduct in relation to such system; or
c. failed to perform on any previous contract.

4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? **(Companies or persons who are listed on this Database were informed `in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied).** The Database of Restricted Suppliers now resides on the National Treasury's website(**www.treasury.gov.za**) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? **The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.**	Yes ☐	No ☐
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME)……
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT, ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

……...	**……..**
Signature	**Date**
…….	**……..**
Position	**Name of Bidder**

Js365bW

SBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Standard Bidding Document (SBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:

a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.

b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.

4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.

5 In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

[2] Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

_____

(Bid Number and Description)

in response to the invitation for the bid made by:

_____

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of:_____that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

(a) has been requested to submit a bid in response to this bid invitation;
(b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
(c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

(a) prices;

(b) geographical area where product or service will be rendered (market allocation)

(c) methods, factors or formulas used to calculate prices;

(d) the intention or decision to submit or not to submit, a bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid; or

(f) bidding with the intention not to win the bid.

8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

[3] Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

…… ……

Signature Date

…….. ……

Position Name of Bidder

Js914w 2

GOVERNMENT PROCUREMENT GENERAL CONDITIONS OF CONTRACT.

NOTES

The purpose of this document is to:

(i) Draw special attention to certain general conditions applicable to government bids, contracts and orders; and

(ii) To ensure that clients be familiar with regard to the rights and obligations of all parties involved in doing business with government.

In this document words in the singular also mean in the plural and vice versa and words in the masculine also mean in the feminine and neuter.

- **The General Conditions of Contract will form part of all bid documents and may not be amended.**

- **Special Conditions of Contract (SCC) relevant to a specific bid, should be compile separately for every bid (if (applicable) and will supplement the General Conditions of Contract. Whenever there is a conflict, the provisions in the SCC shall prevail.**

TABLE OF CLAUSES

General Conditions of Contract

1. Definitions 1. The following terms shall be interpreted as indicated:

1.1 “Closing time” means the date and hour specified in the bidding documents for the receipt of bids.

1.2 “Contract” means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

1.3 “Contract price” means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.

1.4 “Corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution.

1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.

1.6 “Country of origin” means the place where the goods were mined, grown or produced or from which the services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.

1.7 “Day” means calendar day.

1.8 “Delivery” means delivery in compliance of the conditions of the contract or order.

1.9 “Delivery ex stock” means immediate delivery directly from stock actually on hand.

1.10 “Delivery into consignees store or to his site” means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.

1.11 "Dumping" occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.

1.12 ”Force majeure” means an event beyond the control of the supplier and not involving the supplier’s fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

1.13 “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder, and includes collusive practice among bidders prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.

1.14 “GCC” means the General Conditions of Contract.

1.15 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.

1.16 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.

1.17 “Local content” means that portion of the bidding price which is not included in the imported content provided that local manufacture does take place.

1.18 “Manufacture” means the production of products in a factory using labour, materials, components and machinery and includes other related value-adding activities.

1.19 “Order” means an official written order issued for the supply of goods or works or the rendering of a service.

1.20 “Project site,” where applicable, means the place indicated in bidding documents.

1.21 “Purchaser” means the organization purchasing the goods.

1.22 “Republic” means the Republic of South Africa.

1.23 “SCC” means the Special Conditions of Contract.

1.24 “Services” means those functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.

1.25 “Written” or “in writing” means handwritten in ink or any form of electronic or mechanical writing.

2. Application.

2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.

2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.

2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.

3. General

3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

3.2 With certain exceptions, invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

4. Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

5. Use of contract documents and information; inspection.

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's 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.

6. Patent rights.

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

7. Performance security

7.1 Within thirty (30) days of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

7.2 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 his obligations under the contract.

7.3 The performance security shall be denominated in the currency of the contract or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:

(a) A bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
(b) A cashier's or certified cheque

7.4 The performance security will be discharged by the purchaser and returned to the supplier not later than thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.

8. Inspections, tests and analyses

8.1 All pre-bidding testing will be for the account of the bidder 8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or organization acting on behalf of the Department.

8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the Department or an organization acting on behalf of the Department

8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.

8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.

8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the cost in connection with these inspections, tests or analyses shall be defrayed by the supplier.

8.6 Supplies and services which are referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.

8.7 Any contract supplies may on or after delivery be inspected, tested or 8 analyzed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies shall be held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies which do comply with the requirements of the contract .Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract on account of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC

9. Packing

9.1 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. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 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 SCC, and in any subsequent instructions ordered by the purchaser.

10. Delivery and documents

10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

10.2 Documents to be submitted by the supplier are specified in SCC.

11. Insurance

11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.

12. Transportation

12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.

13. Incidental services

13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

(a) Performance or supervision of on-site assembly and/or commissioning of the supplied goods;
(b) Furnishing of tools required for assembly and/or maintenance of the supplied goods;
(c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;
(d) Performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and
(e) Training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, 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.

14. Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

(a) Such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and
(b) In the event of termination of production of the spare parts:
(i) Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and
(ii) Following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

15. Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

15.2 This warranty shall remain valid for twelve (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 contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.

15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights which the purchaser may have against the supplier under the contract.

16. Payment

16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.

16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.

16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.

16.4 Payment will be made in Rand unless otherwise stipulated in SCC.

17. Prices

17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.

18. Contract amendments

18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.

19. Assignment

19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.

20. Subcontracts

20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contracts if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract.

21. Delays in the supplier's performance

21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.

21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.

21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.

21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.

21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.

21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up

to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.

22. Penalties

22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.

23. Termination for default

23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

(a) If the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;

(b) If the Supplier fails to perform any other obligation(s) under the contract; or

(c) If the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.

23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.

23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.

23.5 Any restriction imposed on any person by the Accounting Officer / Authority will, at the discretion of the Accounting Officer / Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Officer / Authority actively associated.

23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:

(i) The name and address of the supplier and / or person restricted by the purchaser;
(ii) The date of commencement of the restriction
(iii) The period of restriction; and
(iv) The reasons for the restriction.

These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.

23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than 10 years. The National Treasury is empowered to determine the period of restriction and each case will be dealt with on its own merits. According to section 32 of the Act the Register must be open to the public. The Register can be perused on the National Treasury website.

24. Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or antidumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

25. Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 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.

26. Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

27. Settlement of Disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

27.5 Notwithstanding any reference to mediation and/or court proceedings herein,

(a) The parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and

(b) The purchaser shall pay the supplier any monies due the supplier.

28. Limitation of liability

28.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;

(a) The supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, 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 penalties and/or 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 total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.

29. Governing language

29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that exchanged by the parties shall also be written in English.

30. Applicable law

30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.

31. Notices

31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address

furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.

31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.

32. Taxes and duties

32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.

32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.

32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

33. National Industrial Participation (NIP) Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation

34. Prohibition of Restrictive practices

34.1 In terms of section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is / are or a contractor(s) was / were involved in collusive bidding (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has / have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3 If a bidder(s) or contractor(s), has / have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and / or terminate the contract in whole or part, and / or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and / or claim damages from the bidder(s) or contractor(s) concerned.

35. SPECIAL CONDITIONS OF CONTRACT

35.1 The State reserves the right to verify and authenticate all the information supplied in this document by the bidder.

35.2 The Bid must be strictly in accordance with the conditions and specifications contained herein.

35.3 If it is found that any information has been tampered with during the evaluation process and/or after the Bid/Contract has been awarded that any false information has been provided, the State reserves the right to take the necessary action as it deems fit, including but not limited to the institution of criminal proceedings.

35.4 Failure to sign all relevant places shall invalidate your bid (**SBD1, SBD 3.1, SBD 4, SBD 6.1 or 6.2, SBD 8, SBD 9 and SCC)**

35.5 All queries should be sent to the relevant person via email state above. No query will be responded to if sent 3 days before the closing date.

35.6 If you are not a registered supplier with the Department of Water and Sanitation, please complete the supplier registration forms and banking details, supplier registration forms are available at Departmental website, www.dwa.gov.za

35.7 Bidders/ Individuals that are directors or members in more than one company bidding for this tender and do not openly declare their interests will be disqualified

35.8 **Failure to submit original and valid Tax Clearance Certificate shall invalidate your bid.**

35.9 The DWS reserves the right to not make an award on any of the responses to this Bid.

35.10 The DWS reserves the right to award only parts of this bid and re-bid for other parts.

35.11 All bid documents should be hand delivered and deposited in to the Tender Box, if sent via post,
envelope or package, the envelope must be clearly marked to avoid your submission been mixed with normal letters sent to the Department.

35.12 Only signed, original documents will be accepted.

36. ACCEPTANCE OF TERMS AND SPECIAL CONDITIONS

The above terms of the bid and all Annexure have been read, understood and accepted.

For and on behalf of the Bidder:

……

_____	_____
Signature of Bidder:	**Date:**
_____	_____
Bidder's Name & Surname:	**Designation**
_____	_____
Witness Name & Surname:	**Date**
_____	_____
Signature:	**Address (Physical):**

TRADING NAME:_____

CONTACT PERSON:_____

CONTACT NUMBER: _____

CLOSING DATE:_____

This template must be completed by the bidder

TENDER NUMBER		
SERVICE /PROJECT DESCRIPTION		
NAME OF BIDDER		
TENDER AMOUNT		
BBBEE LEVEL		
COMPANY'S COMPOSITION OF EXISTANCE		
	% OWNERSHIP	TOTAL NUMBER
WOMEN		
PEOPLE WITH DISABILITIES		
BLACK MALES		
YOUTH		
PARTICIPATION IN PROJECT IMPLEMENTATION		
	TOTAL NUMBER	LEVEL OF PARTICIPATION (eg Project Management, Technical, Administrative)
WOMEN		
PEOPLE WITH DISABILITIES		
BLACK MALES		
YOUTH		

Please note that this information is for reporting purposes only, and will not prejudice the company in anyway nor will it be considered as an evaluation tool.

Name:.....

Position:.....

Signature:.....Date:.....

Appointment of Contractors for Drilling and Rehabilitation of Boreholes in SA for Three (03) years Term Contract

Terms of References

DEPARTMENT OF WATER AND SANITATION

SOUTH AFRICA

DIRECTORATE WATER RESOURCE PLANNING SYSTEMS

BID NO. W11033

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

(Term contract for a period of three (3) years)

DRILLING AND REHABILITATION OF BOREHOLES BID W
(DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER)

BIDDER'S COMPULSORY BRIEFING SESSION BY THE DEPARTMENT OF WATER AND SANITATION IN SOUTH AFRICA

Deposit: No Deposit

Obtainable from: Procurement Section
Zwamadaka Building
157 Schoeman Street
PRETORIA

Tel. (012) 336-7695/6
(012) 336-8988

Or

Online www.etender.gov.za

Registration time:

Date: **Time:** **BID W**

Place/Venue: National Office, Pretoria

Note: The final venue and dates will be finalised before the advertisement date of the BID.

BID ADVERTISING DATE:

BID CLOSING DATE:

ENQUIRIES: DWS Regional Office, Regional Head

ENQUIRIES: DWS Head Office, Pretoria
Mr. F Fourie
Tel. 012 336 7303
Fax (012) 336 6731

Contractor Signature: _____ Name: _____ Date: _____

(1) DWS Signature: _____ Name: _____ Date: _____

(2) DWS Signature: _____ Name: _____ Date: _____

DEPARTMENT OF WATER AND SANITATION

SOUTH AFRICA

DIRECTORATE WATER RESOURCE PLANNING SYSTEMS

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

INDEX – FORMS

TAX CLEARANCE CERTIFICATE REQUIREMENTS

It is a condition of bid that the taxes of the successful bidder must be in order, or that satisfactory arrangements have been made with South African Revenue Services (SARS) to meet the bidder's tax obligations.

1. In order to meet this requirement bidders are required to complete in full the attached form TCC 001 —Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign bidders / individuals who wish to submit bids.

2. SARS will then furnish the bidder with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3. The original Tax Clearance Certificate must be submitted together with the bid. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the bid. Certified copies of the Tax Clearance Certificate will not be acceptable.

4. In bids where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5. Copies of the TCC 001 —Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

DEPARTMENT OF WATER AND SANITATION

SOUTH AFRICA

DIRECTORATE WATER RESOURCE PLANNING SYSTEMS

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

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DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SECTION 1 - INFORMATION PROVIDED TO BIDDER

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DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

INFORMATION PROVIDED TO BIDDER

1. PARTICULARS OF BID ENQUIRY

Bids are invited for the drilling and rehabilitation of boreholes associated with the requirements for disaster management, community water supply, resource assessment and resource management of the Department of Water and Sanitation in Municipal Areas with several operation and maintenance service centres defined by the following information. Note that the drilling services are required for a period of three years from the date of award and that no specific quantity of work has been identified. Five (5) drilling contractors may be appointed per provincial service centre for Standard Drilling Services and five (5) or less for South Africa for Specialized Drilling and other specialized Services.

1-1. South Africa:
- Limpopo Province
- Mpumalanga Province
- Gauteng Province
- North West Province
- Free State Province
- Northern Cape Province
- Western Cape Province
- Eastern Cape Province
- KwaZulu Natal Province

1-2. The 9 Provinces act as service centres because the regional office will manage their projects and the National office will only coordinate the contract. A Locality Map is provided in Section 6. The service centre includes the following municipal areas

- Limpopo Province Service Centre (Polokwane)
- Mpumalanga Province Service Centre (Mbombela)
- Gauteng Province Service Centre (Pretoria)
- North West Province Service Centre (Mafikeng)
- Free State Province Service Centre (Bloemfontein)
- Northern Cape Province Service Centre (Kimberley)
- Western Cape Province Service Centre (Bellville)
- Eastern Cape Province Service Centre (East London)
- KwaZulu Natal Province Service Centre (Durban)

1-3. Communities: Project communities are at present not specified but may include various rural communities in the 9 Provinces.

1-4. Project names are as follows:

1-4-1. Drilling of boreholes in South Africa

1-4-2. Specialised drilling of boreholes in South Africa

1-4-3. Sealing of high flow artesian boreholes in South Africa

1-4-4. Rehabilitation of boreholes in South Africa (Jumper rig)

1-5. Bid number: W

1-6. Implementing Authority: Department of Water and Sanitation - National Office, Directorate Water Resource Planning Systems

1-7. Address of Implementing Authority

The Director General
Private Bag X313
PRETORIA
0001

1-8. Contact person – Director Water Resource Planning Systems

Dr. B Mwaka
Tel: (012) 336 7500
Fax: (012) 336 6731

Mr. F Fourie
Tel: (012) 336 7303
Tel: (012) 336 6731

1-9 Provincial Contact Persons

Limpopo Province (Polokwane Regional Office)	Mr. WH du Toit Tel: (015) 290 1262 Fax: (015) 297 3625
Mpumalanga Province (Mbombela Regional Office)	Mr. M Ralushi Tel: (015) 290 1262 Fax: (015) 297 3625
Gauteng Province (Pretoria Regional Office)	Mr. A Shibambu Tel: 012) 392 1300 Fax: (012) 392 1304
North West Province (Mafikeng Regional Office)	Ms. R Mpe Tel: (012) 270 9911 Fax: (012) 253 2761
Free State Province (Bloemfontein Regional Office)	Mr. A Jones Tel: (051) 405 9000 Fax: (051) 405 9133
Northern Cape Province (Kimberley Regional Office)	Mr. J Makhetha Tel: (053) 830 8800 Fax: (053) 842 0392
Western Cape Province (Bellville Regional Office)	Mr. M Smart Tel: (021) 941 6000 Fax: (021) 941 6103
Eastern Cape Province (East London Regional Office)	Mr. H Goossens Tel: (043) 701 0376 Fax: (043) 722 6152
KwaZulu Natal Province (Durban Regional Office)	Mr. M Maluleke Tel: (031) 336 2700 Fax: (031) 304 9546

1-10 BID Enquiries

Mr. F Fourie
Tel: (012) 336 7303

1-11. Executive Agencies

Area Consultants

1-12. Validity period of Bid (days) 120 days

1-13. Address for submission of Bid

Director-General
Private Bag X313, Pretoria,
0001

To be deposited in the Bid Box in the entrance of Zwamadaka Building
157 Francis Baard Street, Pretoria

1-13. Closing date and time for submission 11:00

1-14. No submissions by telephone, telex, fax, telegram or e-mail will be accepted.

1-15. Issuing of Documents: One complete set of BID documents, drawings, and of the Schedule of Quantities are issued to a prospective Bidder on a CD. . Or download the documents online from www. www.etender.gov.za. These documents(CD) are obtainable (no deposit required) from:

Assistant Director: Procurement & PSP Admin
Room 26, Zwamadaka Building or Private Bag X313
157 Francis Baard Street Pretoria
0002 0001
Tel: 012 336-7695/6/8988

2. SITE INSPECTION / BRIEFING SESSION

2-1. Compulsory (yes)
2-2. Date _____
2-3. Time _____
2-4. Place / venue:

Note: The final venue and dates will be finalised before the advertisement date of the bid

2-5. For further information contact Mr. F Fourie
Tel: (012) 336 7303
Fax: (012) 336 6731

3. GENERAL SCOPE OF WORK

3-1. Drilling of new boreholes for exploration, monitoring, production assessment and management purposes (yes)

Estimated number Unspecified

3-1-1. Type of drilling method considered suitable

Rotary air percussion with foam (yes)

Odex (yes)

Mud rotary (yes)

3-2. Rehabilitation of existing boreholes

Estimated number Unspecified

3-2-1. Type of drilling method considered suitable (yes)

Rotary air percussion with foam (yes)

Cable tool (jumper) percussion (yes)

4. TERRAIN CONDITIONS

4-1. Topography

Flat surface, plain (yes)

Gently rolling (yes)

Moderately rolling (yes)

Hilly (yes)

Mountainous (yes – limited)

4-2. Vehicle accessibility

Dry weather conditions (Fair)

Wet weather conditions (Poor)

Four- or six-wheel drive required in wet conditions

4-3. Access to be established (yes)

Nature of access:

Light bush clearing (yes)

Heavy bush clearing (yes)

Rudimentary road building (yes)

Dismantling of bore head superstructure for rehabilitation of existing boreholes (yes)

5. DRILLING CONDITIONS

5-1. Geology

Unconsolidated sediments (e.g. loose sand, gravel and/or boulders)
Consolidated sediments (e.g. sandstone, mudstone, siltstone, shale, tillite)
Igneous rocks (e.g. granite, diabase, dolerite) Metamorphic rocks (e.g. gneiss, gabbro, norite, marble, schist)
Highly abrasive rocks (e.g. quartzite)
Carbonate rocks (e.g. dolomite, limestone, chert)

5-2. Expected rock conditions

Hard
Moderately hard
Soft
Weathered
Fractured
Weathered and fractured
Cavities

5-3. Expected drilling conditions

Good to excellent
Fair to poor
Difficult to very difficult

6. FACILITIES AVAILABLE

6-1.	Camping site / depot	(no)
6-2.	Water supply	(no)
6-3.	Power supply	(no)
6-4.	Ablution facilities	(no)
6-5.	Housing / accommodation	(no)

7. INSTRUCTIONS TO BIDDER

Bidders are requested to complete those of the following list of documents as are indicated hereunder.

7-1. Section 3 (all subsections) of this Document

7-2. Section 4 (subsection 2-0, Schedule) of this Document

7-3. Form SBD1.1 (Invitation to Bid)

7-4. Form SBD2 (Application for Tax Clearance Certificate)

7-5. Form SBD6.1 (Preference Points Claim in terms of the Preferential Procurement Regulations, 2011)

7-6. Form SBD4 (Declaration of Interest)

7-7. Form Annexure 11 (Credit Order Instructions)

7-8. Form SBD 8 (Declaration of Bidders past supply chain management practise)

7-9. Form SBD 9 (Certificate of independent BID determination)

7-10. Certificate of Bidder‘s Attendance of Briefing session in Section 5 of this Document

7-11. Form of Bid in Section 5 of this Document

7-12. Appendix to Bid in Section 5 of this Document

7-13. Agreement in Section 5 of this Document

SECTION 2

CONDITIONS OF BID, CONDITIONS OF CONTRACT AND SPECIFICATIONS

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SECTION 2 – CONDITIONS OF BID, CONDITIONS OF CONTRACT AND SPECIFICATIONS

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DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

CONDITIONS OF BID, CONDITIONS OF CONTRACT AND SPECIFICATIONS

1. CONDITIONS OF BID

1-1 SITE INSPECTION/BRIEFING SESSION

A Representative from the offices of the Engineer will meet prospective Bidders at the time and place stated in Clause 2 of the Information Provided to Bidders (Section 1 of the Bid Documents) to conduct a Briefing Session. The Representative will not be available at any other time for the Briefing Session.

Representation of the Bidder at the Site Inspection/Briefing Session must be by a person who is suitably qualified and experienced to comprehend the implications of the work involved. If attendance at the Site Inspection/ Briefing Session is indicated in Sub-Clause 2.1 of the Information Provided to Bidders as being "compulsory" and the Bidder or his representative does not attend the Site Inspection/Briefing Session, the Bid will be disregarded, unless -

(a) The Bidder has, prior to the time and date set for the Briefing Session, made a written and motivated application to the Engineer for exemption from attendance, and

(b) The Engineer has, prior to the time and date set for the Site Inspection, exempted the Bidder, in writing, from attendance, and

(c) The Engineer's original exemption certificate is attached to the Certificate of Bidder's Visit to the Site in Section 5 of the Bid Documents.

If attendance at the Site Inspection/Briefing Session is not indicated as "Compulsory" as aforesaid and the Bidder does not attend or is not represented thereat as aforesaid and his bid is subsequently accepted, it will be deemed that the Bidder has otherwise acquainted himself with all information and data as provided by the Engineer at the Site Inspection/Briefing Session.

Attendance at the Site Inspection, or exemption there from, shall not in any way relieve the successful Bidder of his obligations and liabilities in terms of Sub-Clause 3.(2) of the Conditions of Contract.

1-2 SCHEDULE AND FORMS TO BE COMPLETED

Bidders must complete the forms indicated in Clause 7 of the Information Provided to Bidders (Section 1 of the Bid Documents) in indelible black ink.

Mistakes made by the Bidder in completing the said forms shall not be erased. A line must be drawn through the incorrect entry, the correct entry must be written above, and corrections must be initialled by the Bidder. Failure to observe this rule may cause the Bid to be disqualified.

Where space is provided for the entry of information other than signatures, such entries must be in clearly legible block letters.

1-3 BID DOCUMENTS

A Bidder who does not submit a Bid must return the Bid Documents (i.e., the Project Document and the Book of Drawings (if applicable) to the Engineer by the closing date of the Bid.

1-4 ALTERNATIVE BIDS

Alternative Bids will not be accepted.

1-5 SIGNING OF BID

The Bid must be signed by a duly authorised person. A Bid submitted by a joint venture of two or more firms must be accompanied by the document of establishment of the joint venture (duly registered and authenticated by a notary public or other official deputed to witness sworn statements) defining the conditions under which the joint venture will function, its duration, the persons authorised to represent it and who are obligated thereby, the participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning.

1-6 AMENDMENTS TO OR QUALIFICATIONS OF BID DOCUMENTS

No unauthorized amendment or addition shall be made to the Forms to be completed in accordance with Clause 7 of the Information Provided to Bidders (Section 1 of the Bid Documents) or any other part of the Bid Documents. If any such amendment, alteration or addition is made, this will be regarded as a qualification of the Bid and will not only be ignored when Bids are compared, but may also cause the Bid to be disqualified. If the Schedule of Rates is not properly completed, the Bid may be rejected.

Bids submitted in accordance with these Bid Documents shall not have any qualifications. Any point of difficulty in their interpretation must be resolved with the Engineer as early as possible during the Bid Period. If a query is found to be of significance, the Engineer will inform all Bidders accordingly as soon as possible.

If the Bidder, notwithstanding the above, wishes to amend or qualify the Bid Documents, such amendment or qualification shall be set out explicitly in a covering letter submitted with his Bid. Any amendment or qualification contained in or appearing in or to be inferred from a programme submitted with a Bid, will be invalid unless the covering letter and the programme are identifiably in the said covering letter.

1-7 CONFIDENTIAL NATURE OF DOCUMENTS

All recipients of the Bid Documents (whether or not a Bid is submitted) shall treat the details of the documents as private and confidential.

1-8 COSTS INCURRED BY BIDDER

The Employer will neither be responsible for nor pay for costs incurred by a Bidder in preparing the Bid or in visiting the Site in this connection.

1-9 EVALUATION CRITERIA, ADJUDICATION AND ACCEPTANCE OF BID

1-9.1 Evaluation Criteria

1-9-1-1 Adjudication overview

The Department will have the authority to award the BID according to the criteria described below.

The bids will be evaluated according to the following Phase approach. If the Bid does not fully meet the criteria set out in each phase, it shall be regarded as non-responsive.

Phase 1: Administration Compliance

It's compulsory that all bidders comply with the administration requirements of this bid. Omission to complete and/or submit the listed documents will render your bid non responsive and the bid will not be considered for the phase 2 evaluation. The compulsory documents that must be completed and/or attached to the bid include;

1. An original and valid tax clearance certificate
2. Company registration certificate (original or certified copy)
3. Labour and Compensation letters/Certificate
4. Completed and signed standard bidding documents (SBD1.1, SBD2, SBD 4, SBD 6.1, SBD 7.1, SBD 7.2, SBD 8, SBD 9
5. Briefing session attendance

Preference will be given to companies owned by women, youth and disabled people.

Phase 2: Specification Compliance

Bidders must comply with all the technical specifications of this bid. Omission to complete and/or submit the listed documents will render your bid non responsive and the bid will not be considered for the phase 3 evaluation. The following documents must be completed in full by the bidder:

1. Annexure 2 (Schedule of rates)
2. Particulars of the Bidder
3. Statement of Recent Similar Works Completed
4. Statement of Supervisory Personnel to be Deployed
5. Statement of Plant and Equipment to be deployed
6. Schedule of Proposed Sub-Contractors

Phase 3: Evaluation of price and preference points claimed

If Bids qualify after Technical Section Evaluation then Bids will be evaluated in accordance with Financial Section and B-BBEE Status Level of Contribution (form SBD 6.1). These prices will be converted to the 90/10 preference point system as prescribed in the Preferential Procurement Regulations and as indicated in the Terms of Reference. A maximum of 90 points will be awarded to the lowest Bidder of any group of price schedules and preference points claimed for B-BBEE Status Level of Contribution will be awarded out of a total of 10 (See form SBD 6.1).

1. B-BBEE Points

Bidders should note that points may be claimed for B-BBEE in terms of the Preferential Procurement Regulation, 2011.

Such claims should be accompanied by either an original SANAS accredited certificate or a certified copy of such a certificate to qualify for the points.

2. Financial Proposal

SBD 7.1 Pricing Schedule (Schedule 8.1) must include the total offer.

The contract will be executed on the basis of Schedules of Rates. No specific quantity of work has been identified.

1-9.2 Acceptance of Bid

The Employer is not bound to accept the lowest or any Bid in terms of 1-9-3 (b).

1-9-3 Basis of Bid Adjudication

(a) Assumption of Quantities for Adjudication Purposes

The Contract will be executed on the basis of Schedules of Rates. No specific quantity of work has been identified. No guarantee can be given regarding the expenditure of this contract.

To assist the prospective Bidders in determining their rates to be bidded, typical quantities for the drilling of 210 new boreholes with a rotary air percussion drilling and odex, mud rotary, symmatrix and auger drilling as well as something on Sealing of artesian boreholes is being reflected hereafter. In addition typical quantities for the rehabilitation of 105 existing boreholes employing rotary air percussion and/or cable tool (jumper) percussion is being reflected hereafter.

The bidder shall complete the price schedules for South Africa.

The bidder needs to provide list priority of provinces interest (Section 4, Ch 3) if Standard Drilling Schedule is completed.

This bid will be adjudicated based upon the offers received for the price schedule. The contract will be awarded schedule by schedule.

Only complete offers of price schedules will be considered. Incomplete offers of price schedules will not be adjudicated (see Chapter 1-9-1-1).

For the Standard drilling contract between twelve (12) and thirty (30) Bidders, with the highest score for South Africa (five (5) bidders per province with a maximum of four (4) provinces per bidder), will be awarded a contract according to each bidder‘s priority list. The capacity of each bidder will also consider when number of provinces been awarded.

For the Specialized drilling, Artesian and Rehabilitation contracts between five (5) and ten (10) Bidders, with the lowest score for South Africa, will be awarded a contract.

(b) Adjudication

Bids shall hold good and remain valid for acceptance for a period of 120 days commencing as from the closing time and date for bid offers.

The Employer reserves the rights to adjust any arithmetical or other patent errors in the Bid. Any adjustments in this respect made by the Engineer to the Bid will be communicated to the Bidder prior to the acceptance of the Bid.

The Employer does not bind himself to accept the lowest or any Bid nor to assign any reason for the rejection of a Bid and may if he so desires divide the Contract between any two or more Bidders and will not be held liable for any expense incurred in submitting Bids.

Bids, where the prices bidded for erection and site testing are less than 2/3 the average of the comparative bidded prices of the remaining Bids for the same item, will be rejected.

The Department may not award any part of the group price schedules to the next bidder where the bid price differ more than 40% of the comparative price of the lowest bidder.

IMPORTANT CONDITIONS

The Department reserves the right to deal with the Contractor and his principals throughout the duration of the contract.

The services are required for a period of three years from the date of award and no specify quantity of work has been identified. This is an Indefinite Delivery Contract (Price Agreement) with Multiple-Vendors. Order will be placed as required by the Regional Office, Agriculture, Environmental, Implementing Agents, Local Government, Health, Public Works, Education and the Municipalities of SOUTH AFRICA over the

three-year period.

NOTE:

The various municipalities are not bonded to make use of the contract after the Department of Water and Sanitation transferring the schemes towards the municipalities.

The contractor cannot hold the Department of Water and Sanitation liable for any claims when the municipality makes use of the obligation to request the cancellation of the contract.

Typical quantities for the STANDARD Drilling of 210 new boreholes for exploration, production, monitoring, assessment and management purposes

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities to Site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
2-0	**DRILLING (Unconsolidated and consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**		
2-1	**Rotary air percussion** with foam – 0 to 150 m		
2-1-1	165 mm diameter	m	25 000
2-1-2	203 mm diameter	m	2 500
2-1-3	254 or 216 mm diameter	m	4 000
2-1-4	305 mm diameter	m	1 000
2-2	**Rotary air percussion** with foam – 151 to 300 m (rate to be over and above items 2-1-1 to 2-1-4)		
2-2-1	165 mm diameter	m	6000
2-2-2	203 or 216 mm diameter	m	1000
2-2-3	254 mm diameter	m	2000

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
2-2-4	305 mm diameter	m	1000
3-0	**DRILLING (Highly abrasive rocks e.g. quartzite)**		
3-1	**Rotary air percussion** with foam – 0 to 150 m		
3-1-1	165 mm diameter	m	6000
3-1-2	203 or 216 mm diameter	m	1000
3-1-3	254 mm diameter	m	2000
3-1-4	305 mm diameter	m	1000
3-2	**Rotary air percussion** with foam – 151 to 300 m (rate to be over and above items 3-1-1 to 3-1-4)		
3-2-1	165 mm diameter	m	3000
3-2-2	203 or 216 mm diameter	m	500
3-2-3	254 mm diameter	m	500
3-2-4	305 mm diameter	m	500
4-0	**DRILLING (Leached / cavernous carbonate rocks)**		
4-1	**Rotary air percussion** with foam 1m to Max 150m		
4-1-1	165 mm diameter	m	6000
4-1-2	203 or 216 mm diameter	m	1000
4-1-3	254 mm diameter	m	2000
4-1-4	305 mm diameter	m	1000
5-0	**Mark-up on materials – not included in bid (Instructions to be received from Client/Consultant)**		
5-1	Mark-up on materials less than R100 000	%	100 000
5-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
6-0	**CASING (supplied, delivered and installed)**		
6-1	Steel (bevel-edged plain)		
6-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
6-1-2	215 mm ID (minimum wall thickness 4.5 mm)	m	1500
6-1-3	254 mm ID (minimum wall thickness 4.5 mm)	m	2500
6-2	Steel (slotted, width 3-4 mm)		
6-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
6-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
6-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
6-3	UPVC (flush internal/external thread-jointed, plain)		
6-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
6-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
6-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
6-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
6-4	UPVC (flush internal/external thread-jointed, perforated)		
6-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
6-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
6-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
6-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
6-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
6-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
7-0	**CASING SHOES** – For drill & drive – on instruction from client/consultant only		
7-1	To fit 165 mm ID steel casing	m	40
7-2	To fit 215 mm ID steel casing	m	40
7-3	To fit 254 mm ID steel casing	m	40
8-0	**REAMING OF BOREHOLES**		
8-1	152 mm / 165 mm to 203 mm or 219 mm diameter	m	5000
8-2	203 mm or 219 mm to 254 mm diameter	m	1000
8-3	152 mm or 165 mm to 254 mm diameter	m	5000
9-0	**RECOVERY OF STEEL CASING**	**m**	**2000**
10-0	**FORMATION STABILISER** (supplied, delivered and installed)		
10-1	Silica sand	Per/kg	50 000
10-2	Liquid	Per/Lt	10 000
11-0	**CONCRETE COLLAR** (complete per borehole)	**No**	**400**
12-0	**GROUTING**		
12-1	0 to 2 m^3	m^3	500
12-2	2 to 10 m^3	m^3	500
12-3	Greater than 10m^3	m^3	500
13-0	**SANITARY SEAL** (complete per borehole) per m – maximum five metres		
13-1	Type I (254 mm hole & 165 mm ID casing)	m	200
13-2	Type II (305 mm hole & 215/254 mm ID casing)	m	100
14-0	**ARTESIAN BOREHOLE SEAL OR CAPING** (complete per borehole)		
14-1	0 to 2 L/s	No	100
15-0	**BOREHOLE DISINFECTION** (complete per borehole)	**No**	**300**
16-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
16-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
17-0	**BOREHOLE MARKING** (complete per borehole) (refer to Drawing No. 9)	No	400
18-0	**DATA RECORDING AND REPORTING** (complete per borehole)	No	400

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		
19-0	**Development of Borehole (also for blow yield)**	Hr	600
20-0	**STANDING TIME RATE**	Hr	500
21-0	**BOREHOLE REHABILITATION**		
21-1	With rotary air percussion drilling rig with foam	Hr	200
22-0	**Casual (Day) labour sourced locally**	Day	150

Typical quantities for the SPECIALIZED Drilling of 105 new boreholes for exploration, production, monitoring, assessment and management purposes

Odex

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site	Sum	100
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-5-3	Greater than 1000 km	Sum	100
2-0	**DRILLING** (Unconsolidated and consolidated sediments, igneous, metamorphic and fractured carbonate rocks)		
2-1	**Odex** (including supply, delivery & installation of at least 6 mm sidewall Odex casing) – loose/Fractured formation – boulders and sand		
2-1-1	194 mm OD (including casing)	m	2000
2-1-2	219 mm OD (including casing)	m	2000
2-1-3	273 mm OD (including casing)	m	2000
3-0	**DRILLING** (Leached / cavernous carbonate rocks)		
3-1	**Odex** (including supply, delivery & installation of at least 6 mm sidewall Odex casing)		
3-1-1	194 mm OD (including casing)	m	2000
3-1-2	219 mm OD (including casing)	m	2000
3-1-3	273 mm OD (including casing)	m	2000
4-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		
4-1	Mark-up on materials less than R100 000	%	100 000
4-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
5-0	**CASING** (supplied, delivered and installed)		
5-1	Steel (bevel-edged plain)		
5-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
5-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
5-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500
5-2	Steel (slotted, width 3-4 mm)		
5-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
5-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
5-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
5-3	UPVC (flush internal/external thread-jointed, plain)		
5-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
5-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
5-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
5-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
5-4	UPVC (flush internal/external thread-jointed, perforated)		
5-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
5-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
5-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
5-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
5-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
5-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
6-0	**CASING SHOES**		
6-1	To fit 165 mm ID steel casing	m	40
6-2	To fit 215 mm ID steel casing	m	40
6-3	To fit 254 mm ID steel casing	m	40
7-0	**REAMING OF BOREHOLES**		
7-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000
7-2	203 mm or 219 mm to 254 mm diameter	m	1000
7-3	152 mm or 165 mm to 254 mm diameter	m	5000
8-0	**RECOVERY OF STEEL CASING**	m	2000
9-0	**FORMATION STABILISER** (supplied, delivered and installed)		
9-1	Silica sand	Per/kg	50 000
9-2	Liquid	Per/Lt	10 000
10-0	**CONCRETE COLLAR** (complete per borehole)	No	400
11-0	**GROUTING**		
11-1	0 to 2 m^3	m^3	500
11-2	2 to 10 m^3	m^3	500
11-3	Greater than 10m^3	m^3	500
12-0	**SANITARY SEAL** (complete per borehole)		
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
15-0	**BOREHOLE MARKING** (complete per borehole) (refer to Drawing No. 9)	No	400
16-0	**DATA RECORDING AND REPORTING** (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		
17-0	**Development of Borehole (also for blow yield)**	Hr	600
18-0	**STANDING TIME RATE**	Hr	500
19-0	**BOREHOLE REHABILITATION**		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
19-1	With rotary air percussion drilling rig with foam	Hr	200
20-0	**Casual (Day) labour sourced locally**	Day	150

Mud Rotary

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site	Sum	100
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100
1-5-3	Greater than 1000 km	Sum	100
1-6	Excavation of mud pit	Sum	100
2-0	**DRILLING** (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)		
2-1	**Mud rotary** (including supply, delivery & installation) – loose/Fractured formation – boulders and sand		
2-1-1	194 mm OD (including casing)	m	2000
2-1-2	219 mm OD (including casing)	m	2000
2-1-3	273 mm OD (including casing)	m	2000

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		
3-1	Mark-up on materials less than R100 000	%	100 000
3-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
4-0	**CASING** (supplied, delivered and installed)		
4-1	Steel (bevel-edged plain)		
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500
4-2	Steel (slotted, width 3-4 mm)		
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
4-3	UPVC (flush internal/external thread-jointed, plain)		
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
4-4	UPVC (flush internal/external thread-jointed, perforated)		
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
5-0	**CASING SHOES**		
5-1	To fit 165 mm ID steel casing	m	40
5-2	To fit 215 mm ID steel casing	m	40
5-3	To fit 254 mm ID steel casing	m	40
6-0	**REAMING OF BOREHOLES**		
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000
6-2	203 mm or 219 mm to 254 mm diameter	m	1000
6-3	152 mm or 165 mm to 254 mm diameter	m	5000
7-0	**RECOVERY OF STEEL CASING**	**m**	**2000**
8-0	**FORMATION STABILISER** (supplied, delivered and installed)		
8-1	Silica sand	Per/kg	50 000

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
8-2	Liquid	Per/Lt	10 000
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400
10-0	**GROUTING**		
10-1	0 to 2 m^3	m^3	500
10-2	2 to 10 m^3	m^3	500
10-3	Greater than 10m^3	m^3	500
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400
12-0	**SANITARY SEAL** (complete per borehole)		
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		
17-0	**Development of Borehole (also for blow yield)**	Hr	600
18-0	**STANDING TIME RATE**	Hr	500
19-0	**BOREHOLE REHABILITATION**		
19-1	With rotary air percussion drilling rig with foam	Hr	200
20-0	**Casual (Day) labour sourced locally**	Day	150

Symmetrix

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.)		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
	- Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100
1-5-3	Greater than 1000 km	Sum	100
2-0	**DRILLING (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**		
2-1	**Symmetrix** (including supply, delivery & installation) – loose formation – sand and clay		
2-3-1	165 mm OD (including casing)	m	2000
2-3-2	219 mm OD (including casing)	m	2000
2-3-3	300 mm OD (including casing)	m	2000
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		
3-1	Mark-up on materials less than R100 000	%	100 000
3-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
4-0	**CASING** (supplied, delivered and installed)		
4-1	Steel (bevel-edged plain)		
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
4-2	Steel (slotted, width 3-4 mm)		
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
4-3	UPVC (flush internal/external thread-jointed, plain)		
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
4-4	UPVC (flush internal/external thread-jointed, perforated)		
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
5-0	**CASING SHOES**		
5-1	To fit 165 mm ID steel casing	m	40
5-2	To fit 215 mm ID steel casing	m	40
5-3	To fit 254 mm ID steel casing	m	40
6-0	**REAMING OF BOREHOLES** (Reaming bids must be available)		
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000
6-2	203 mm or 219 mm to 254 mm diameter	m	1000
6-3	152 mm or 165 mm to 254 mm diameter	m	5000
7-0	**RECOVERY OF STEEL CASING**	m	2000
8-0	**FORMATION STABILISER** (supplied, delivered and installed)		
8-1	Silica sand	Per/kg	50 000
8-2	Liquid	Per/Lt	10 000
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400
10-0	**GROUTING**		
10-1	0 to 2 m^3	m^3	500
10-2	2 to 10 m^3	m^3	500
10-3	Greater than 10m^3	m^3	500
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400
12-0	**SANITARY SEAL** (complete per borehole)		
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
	casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		
17-0	**Development of Borehole (also for blow yield)**	Hr	600
18-0	**STANDING TIME RATE**	Hr	500
19-0	**BOREHOLE REHABILITATION**		
19-1	With rotary air percussion drilling rig with foam	Hr	200
20-0	**Casual (Day) labour sourced locally**	Day	150

Auger

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100
1-5-3	Greater than 1000 km	Sum	100
2-0	**DRILLING (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**		
2-1	**Auger** (including supply, delivery & installation) – loose/Fractured formation – clay and sand		
2-1-1	165 mm diameter	m	2000
2-1-2	203 or 216 mm diameter	m	2000
2-1-3	254 mm diameter	m	2000
2-1-4	305 mm diameter	m	2000
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		
3-1	Mark-up on materials less than R100 000	%	100 000
3-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
4-0	**CASING** (supplied, delivered and installed)		
4-1	Steel (bevel-edged plain)		
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500
4-2	Steel (slotted, width 3-4 mm)		
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
4-3	UPVC (flush internal/external thread-jointed, plain)		
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
4-4	UPVC (flush internal/external thread-jointed, perforated)		
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
5-0	**CASING SHOES**		
5-1	To fit 165 mm ID steel casing	m	40
5-2	To fit 215 mm ID steel casing	m	40
5-3	To fit 254 mm ID steel casing	m	40
6-0	**REAMING OF BOREHOLES** (Reaming bids must be available)		
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000
6-2	203 mm or 219 mm to 254 mm diameter	m	1000
6-3	152 mm or 165 mm to 254 mm diameter	m	5000
7-0	**RECOVERY OF STEEL CASING**	m	2000
8-0	**FORMATION STABILISER** (supplied, delivered and installed)		
8-1	Silica sand	Per/kg	50 000
8-2	Liquid	Per/Lt	10 000
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400
10-0	**GROUTING**		
10-1	0 to 2 m^3	m^3	500
10-2	2 to 10 m^3	m^3	500
10-3	Greater than 10m^3	m^3	500
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400
12-0	**SANITARY SEAL** (complete per borehole)		
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
17-0	**Development of Borehole (also for blow yield)**	Hr	600
18-0	**STANDING TIME RATE**	Hr	500
19-0	**BOREHOLE REHABILITATION**		
19-1	With rotary air percussion drilling rig with foam	Hr	200
20-0	**Casual (Day) labour sourced locally**	Day	150

Artesian Borehole (>2 L/s)

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100
1-5-3	Greater than 1000 km	Sum	100
2-0	**SEALING AND CAPPING**		
2-2	2 to 10 L/s	No	100
2-3	Greater than 10 L/s	No	100
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
3-1	Mark-up on materials less than R100 000	%	100 000
3-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
4-0	**CASING** (supplied, delivered and installed)		
4-1	Steel (bevel-edged plain)		
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500
4-2	Steel (slotted, width 3-4 mm)		
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
4-3	UPVC (flush internal/external thread-jointed, plain)		
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
4-4	UPVC (flush internal/external thread-jointed, perforated)		
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
5-0	**CASING SHOES**		
5-1	To fit 165 mm ID steel casing	m	40
5-2	To fit 215 mm ID steel casing	m	40
5-3	To fit 254 mm ID steel casing	m	40
6-0	**REAMING OF BOREHOLES**		
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000
6-2	203 mm or 219 mm to 254 mm diameter	m	1000
6-3	152 mm or 165 mm to 254 mm diameter	m	5000
7-0	**RECOVERY OF STEEL CASING**	m	2000
8-0	**FORMATION STABILISER** (supplied, delivered and installed)		
8-1	Silica sand	Per/kg	50 000
8-2	Liquid	Per/Lt	10 000
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
10-0	**GROUTING**		
10-1	0 to 2 m^3	m^3	500
10-2	2 to 10 m^3	m^3	500
10-3	Greater than 10m^3	m^3	500
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400
12-0	**SANITARY SEAL** (complete per borehole)		
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		
17-0	**Development of Borehole (also for blow yield)**	Hr	600
18-0	**STANDING TIME RATE**	Hr	500
19-0	**BOREHOLE REHABILITATION**		
19-1	With rotary air percussion drilling rig with foam	Hr	200
20-0	**Casual (Day) labour sourced locally**	Day	150

Typical quantities for the Rehabilitation of 105 existing boreholes

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation,		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
	- Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.		
1-1	Establishment of Own Facilities on Site		
1-1-1	0 to 500 km	Sum	100
1-1-2	500 to 1000 km	Sum	100
1-1-3	Greater than 1000 km	Sum	100
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300
1-4	Interhole moves		
1-4-1	For distances exceeding 10 km	Km	20 000
1-5	De-establishment from site	Sum	100
1-5-1	0 to 500 km	Sum	100
1-5-2	500 to 1000 km	Sum	100
1-5-3	Greater than 1000 km	Sum	100
2-0	**CASING (supplied, delivered and installed)**		
2-1	Steel (bevel-edged plain)		
2-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000
2-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500
2-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500
2-2	Steel (slotted, width 3-4 mm)		
2-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500
2-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500
2-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000
2-3	UPVC (flush internal/external thread-jointed, plain)		
2-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000
2-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000
2-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000
2-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000
2-4	UPVC (flush internal/external thread-jointed, perforated)		
2-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400
2-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400
2-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400
2-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400
2-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400
2-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400
3-0	**REAMING OF BOREHOLES**		

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
3-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	2000
4-0	**RECOVERY OF STEEL CASING**	m	1000
5-0	**FORMATION STABILISER** (supplied, delivered and installed) – See specifications.		
5-1	Silica sand	Per/kg	50 000
5-2	Liquid	Per/Lt	10 000
6-0	**CONCRETE COLLAR** (complete per borehole)	No	50
7-0	**SANITARY SEAL** (complete per borehole) per m – maximum five metres		
7-1	Type I (254 mm hole & 165 mm ID casing)	m	50
7-2	Type II (305 mm hole & 215/254 mm ID casing)	m	50
8-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	500
9-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit		
9.1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300
10-0	**STANDING TIME RATE**	Hr	500
11-0	**BOREHOLE REHABILITATION** (Cable tool percussion)		
11-1	With cable tool (jumper) drilling rig	Hr	5000
12-0	**BOREHOLE MARKING** (refer to Drawing No. 9)	No	500
13-0	**EQUIPMENT REMOVAL AND RE-INSTALLATION**		
13-1	Hand pump, Windmills, Motorized, installations 25 to 65mm pipes		
13-1-1	Removal for 1st 100m depth	No	200
13-1-2	Removal from depths extra-over 100m	m	1000
13-1-3	Re-installation to 100m depth	No	200
13-1-4	Re-installation to depths extra-over 100m	m	1000
13-2	Motorized installations above 65mm pipes		
13-2-1	Removal for 1st 100m depth	No	200
13-2-2	Removal from depths extra-over 100m	m	1000
13-2-3	Re-installation to 100m depth	No	200
13-2-4	Re-installation to depths extra-over 100m	m	1000
13-3	Bore head superstructure		
13-3-1	Dismantling of superstructure	No	50
13-3-2	Re-assembly of superstructure	No	50
13-3-3	Remove windmill from borehole	No	50
13-3-4	Fit / install windmill back onto borehole	No	50
14-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)		
	Materials	Sum	500 000

Item No. (As per Schedule of Rates, Section 4 of this document)		Unit	Quantity
14-1	Mark-up on materials less than R100 000	%	100 000
14-2	Mark-up on materials above R100 000	%	100 000
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000
	R500 000 utilized for item 5-2		
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used		
14-3	Labour	Hr	300
14-4	Travelling costs for repairs @ AA rates		
15-0	**DATA RECORDING AND REPORTING** (complete per borehole)	No	400
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGDB The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.		

Should the Engineer decide not to utilize the abovementioned quantities, then the quantities to be used for adjudication of the bids received will be made available to interested Bidders at the site briefing meeting. These "adjudication quantities" will also be submitted to the Employer as well as the State Bid Board prior to the site-briefing meeting's date.

1-9.4 Application of Preferences

Adjudication of bids will not be carried out on the basis of bidded rates alone and preferences will be applied in respect of the utilisation of South African manufactured materials as described in the Forms contained in Section 5 of the Bid Documents.

The Employer intends to effect payment for materials provided and/or for services rendered within 30 days of certification.

1-10 WITHDRAWAL. MODIFICATION OR CORRECTION OF BID PRIOR TO CLOSING DATE

A Bidder is entitled to withdraw, modify or correct his Bid after it has been delivered, provided that the request for such withdrawal, modification or correction, together with full details of such modification or correction is received at the address given for submission of Bids either in writing or by telegram before the time set on the closing date for Bids. The original Bid, as amended by such written or telegraphic communication, will be considered the Bidder's offer.

1-11 PERIOD OF VALIDITY OF BIDS AND WITHDRAWAL OF BID AFTER

CLOSING DATE

Bids shall remain valid for the period stated in Clause 1-11 of the Information Provided to Bidder (Section 1 of the Bid Documents) after the time and date set for the submission of Bids, or until the Bidder is relieved of this obligation by the Employer, in writing, at an earlier date.

If a Bidder -

(a) withdraws his Bid during its period of validity, or

(b) gives notice of his inability to execute the Contract or fails to commence execution of the Contract, or

(c) fails to sign the Contract Agreement or furnish the required security within the period fixed in the Appendix or any extended time agreed to by the Employer, he shall be liable for and pay to the Employer:

(i) all expenses incurred in calling for new Bids, if this should be necessary,

(ii) the difference between his Bid and a less favourable Bid accepted either from new Bids that were called for or from those already received, and

(iii) any additional escalation due to a delay caused by calling for new Bids.

The Employer may exempt a Bidder from these provisions if he is of the opinion that the circumstances justify such an exemption.

1-12 REPUDIATION OF BID OR INVALIDATION OF CONTRACT

If the Employer is satisfied that the Bidder or any person, whether an employee, partner, director or shareholder of the Bidder or a person acting on behalf of or with the knowledge of the Bidder:

(a) has offered, promised or given a bribe or other gift or remuneration to any person in connection with obtaining a contract, or

(b) has acted in a fraudulent or corrupt manner in obtaining a contract, or

(c) has approached an officer or employee of the Employer or the Engineer in order to influence the award of a contract in the Bidder‘s favour, or

(d) has entered into an agreement or has made an arrangement, whether legally binding or not, with another person, firm or company to:

(i) refrain from bidding for this Contract, or

(ii) as to the amount of the Bid to be submitted by either party, or

(e) has disclosed to another person, firm or company other than the Employer, the exact or approximate amount of his proposed Bid, except when the disclosure, in confidence, had been necessary in order to obtain insurance premium quotations required for the preparation of the Bid,

the Employer may, in addition to other legal remedies, repudiate the Bid or declare the Contract invalid.

1-13 JURISDICTION

The laws of the Republic of South Africa apply to each Contract created by the acceptance of a Bid. Each Bidder shall indicate a place in the Republic and specify it in his Bid as his *domicilium citandi et executandi,* where legal process may be served on him.

Each Bidder shall accept the jurisdiction of the courts of law of South Africa.

1-14 SUBMISSION OF BIDS

Each Bidder is required to return the complete set of Bid Documents (including Drawings) with all the required information and complete in all respects.

Bidders shall not tamper with the Bid Documents, which must be submitted as issued. Bid Documents found to have been unbound and rebound may be deemed unacceptable.

Completed Bid Documents, fully priced and duly signed, must be enclosed in a sealed envelope, endorsed **BID DOCUMENT FOR CONTRACT NO W_____ FOR DRILLIING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA** and must be placed in the bid box at the address stated in Clause 1-12 of the Information Provided to Bidder (Section 1 of the Bid Documents) before the closing time and date for the submission of Bids, as specified in Clause 1-13 of the Information Provided to Bidder (Section 1 of the Bid Documents), or posted to the address stated in the said Clause 1-12 (as applicable) to reach the said address before the specified closing time and date for the submission of Bids.

Bids will be opened in public as soon as practicable after the closing time for the submission of Bids and the names of the Bidders announced. Bidded rates and prices will not be announced.

Bidders will not be permitted to alter the Bid Sum after Bids have been opened.

1-15 ADDITIONAL INFORMATION REQUIRED

The Employer may ask a Bidder to clarify any aspect of his Bid and also reserves the right to instruct the Engineer or a public accountant to report on the financial status of the Bidder, and the Bidder must render all reasonable assistance in such an investigation.

The additional information so obtained as well as all written information submitted by the Bidder with and in support of his Bid, will be considered to form the basis on which the Bid has been prepared and submitted.

1-16 AMENDMENTS TO BID BY EMPLOYER

The Employer reserves the right to correct arithmetical errors in the Bid but under no circumstances will bidded rates be adjusted when such errors are corrected. The Bidder will be informed of the effect of such corrections on his Bid prior to the award of the Contract.

If bidded rates or lump sums are declared unacceptable by the Employer because they are either excessively low or excessively high or not in proper balance with other rates or lump sums, the Bidder may be required to produce evidence and advance arguments in support of these bidded rates or lump sums. If, after submission of such evidence, the Employer is still not satisfied with these bidded rates or lump sums, he may request the Bidder to amend these rates and lump sums along certain specified lines.

The Bidder will then have the opportunity to amend the rates and lump sums objected to.

If the Bidder fails to amend his Bid in a manner acceptable to the Employer, this may prejudice his Bid.

1-17 STAMP DUTIES

Stamp duties in connection with the award of the Contract shall be paid by the successful Bidder.

1-18 TAXES AND LEVIES

Bidded rates and amounts shall include value-added tax (VAT) and shall also include all other, applicable taxes, levies and duties.

1-19 PAGE NUMBERING AND NUMBER OF PAGES

The pages in each section of this document are numbered consecutively, starting from one, with the number of the particular section prefixed to the page numbers.

Bidders shall check the number of pages in each section against the number of pages listed in the table of contents of this document. If any pages are found to be missing, or if there are pages where the printing is indistinct or which contain obvious errors, Bidders must inform the Engineer as soon as possible so that these problems may be rectified.

1-20 RULING LANGUAGE OF THE CONTRACT

The Bid Documents have been drafted in English, and the English editions of the General Conditions of Contract and the Standard Specifications shall apply to this Contract. This Contract will be construed in English.

1-21 INSPECTION OF EQUIPMENT

The Bidder shall submit details of the equipment that shall be used for the Contract. The Employer reserves the right to inspect such equipment prior to awarding the Contract.

1-22 GOVERNMENT PROCUREMENT: GENERAL CONDITIONS OF CONTRACT

Refer to all the applicable conditions as specified in the contract.

1-23 GOVERNMENT PROCUREMENT DOCUMENT

The provisions of the Government Procurement Document (General Conditions of Bid Contract and Order), save to the extent that they are not in conflict with the terms and conditions of this bid document shall apply to the bids and the subsequent Contract resulting from the acceptance of bid.

2. GENERAL CONDITIONS

The Contract shall be governed by the —General Conditions of Contract" - 2010". The only variations from these General Conditions of Contract shall be as given in the Special Conditions of Contract. A copy of these Standard General Conditions of Contract may be obtained from any one of the following:

The South African Association of Civil Engineers
Kelvin House, 75 Marshall Street, JOHANNESBURG

The South African Association of Consulting Engineers Kelvin House, 75 Marshall Street, JOHANNESBURG

3. SPECIAL CONDITIONS OF CONTRACT

PREAMBLE

The General Conditions of Contract specified in Section 1 of this document, excluding all Annexures bound therein and as amended in the manner described hereunder, apply to this Contract subject to the amendments listed.

Unless otherwise stated, clause references appearing herein refer to clause numbers contained in the General Conditions of Contract.

The headings and titles in these Special Conditions shall not be deemed to be part thereof nor be taken into consideration in the interpretation or construction thereof of the Contract.

3-1. SUB-CLAUSE 1(1) : DEFINITIONS

3-1.1 SUB-CLAUSE 1.(1)(c) : COMMENCEMENT DATE

—Commencement Date" means the date of issue of the Letter of Acceptance or any such other date as may be specified in the Letter of Acceptance, whichever is the later, provided always that any such other date so specified shall not be more than TWENTY EIGHT (28) days after the date of the Letter of Acceptance.

3-1.2 SUB-CLAUSE 1.1(g) : CONTRACT PRICE

—Contract Price" means the aggregate amount which shall become due and payable by the Employer to the Contractor in respect of the execution of the Works and the due fulfilment by the Contractor of all its obligations under the Contract, determined in accordance with and in the manner described in the Contract, before the deduction of any penalties and any other amounts which may become due and payable by the Contractor to the Employer in terms of the Contract.

3-1.3 SUB-CLAUSE 1.1(k) : DUE COMPLETION DATE

"Due Completion Date" means the date of expiry of the period allowed to the Contractor for executing and completing each respective Works Segment, as specified by the Engineer in a written instruction to the Contractor instructing the Contractor to commence with the execution of the Works Segment described in the said instruction. The Due Completion Date for each respective Works Segment shall be calculated from the Starting Date of the respective Works Segment and shall be adjusted by such extensions of time (if any) as may be allowed in terms of Clause 45.

3-1.4 SUB-CLAUSE 1.(1)(l) : EMPLOYER

The Employer is the Department of Water and Sanitation – South Africa, Director Water Resource Planning Systems as represented herein by the Director ; Dr. B Mwaka.

3-1.5 SUB-CLAUSE 1.(1)(m) : ENGINEER

The Engineer is the Department of Water and Sanitation – South Africa, Director Water Resource Planning Systems as represented by Mr F Fourie, acting through appointed Area Consultants (geohydrological and/or civil engineering consultants), authorised thereto in writing.

3-1.6 SUB-CLAUSE 1.(1)(ab) : CONDITIONS OF CONTRACT

"(ab) "Conditions of Contract" means the General Conditions of Contract, as amended in these Special Conditions."

3-1.7 SUB-CLAUSE 1.(1)(ac) : CONTRACT PERIOD

"(ac) 'Contract Period' means the period stated in the Appendix, calculated from the Commencement Date, during which all the Works comprised in the Contract are, except only for the rectification of defects in accordance with Clause 56, to be executed and completed by the Contractor."

3-1.8 SUB-CLAUSE 1.(1)(ad) : STARTING DATE

"(ad) 'Starting Date' means the date, as specified by the Engineer in writing, on or before which the Contractor shall commence with the execution of the particular Works Segment referred to in the Engineer's said instruction."

3-1.9 SUB-CLAUSE 1.(1)(ae) : WORKS SEGMENT

"(ae) 'Works Segment' and 'Segment' mean a discrete part or portion of the

overall Works comprised in the Contract and as defined in writing by the Engineer from time to time during the currency of the Contract."

3-2. SUB-CLAUSE 1.(2) : DELIVERY OF NOTICES

—e() in the case of electronically transmitted communications delivered to the specific electronic address (if any) provided by the addressee for the respective type of electronic transmission."

3-3. SUB-CLAUSE 6.(5) COMPLIANCE WITH APPLICABLE LAWS

—Tie Employer and the Contractor hereby agree, in terms of the provisions of Section 37(2) of the Occupational Health and Safety Act 1 993 (Act 85 of 1993, hereinafter referred to as the Act) that the following arrangements and procedures shall apply between them to ensure compliance by the Contractor with the provisions of the Act, namely:

(i) The Contractor undertakes to acquaint the appropriate officials and employees of the Contractor with all relevant provisions of the Act and the regulations promulgated in terms of the Act; and

(ii) The Contractor undertakes that all relevant duties, obligations and prohibitions imposed in terms of the Act and Regulations will be fully complied with; and

(iii) The Contractor hereby accepts sole liability for such due compliance with the relevant duties, obligations and prohibitions imposed by the Act and Regulations and expressly absolves the Employer from himself being obliged to comply with any of the aforesaid duties, obligations and prohibitions;

and

(iv) The Contractor agrees that any duly authorised officials of the Employer shall be entitled, although not obliged, to take such steps as may be necessary to ensure that the Contractor has complied with his undertakings as set out more fully in paragraphs (i) and (ii) above, which steps may include, but will not be limited to, the right to inspect any appropriate site or premises occupied by the Contractor, or to inspect any appropriate records held by the Contractor ; and

(v) The Contractor shall be obliged to report forthwith to the Employer and Engineer any investigation, complaint or criminal charge which may arise as a consequence of the provisions of the Act and Regulations, pursuant to work performed in terms of this Contract, and shall, on

written demand, provide full details in writing, to the Employer and Engineer, of such investigation, complaint or criminal charge."

3-4. CLAUSE 12 COMMENCEMENT OF WORK

(1) Commencement of the Contract

The Contract shall come into force and effect and be binding upon the parties on the Commencement Date as defined in Sub-Clause 1.(1)(c).

(2) Commencement of Works

The Contractor shall, save as may be otherwise provided in the Contract or be legally or physically impossible, commence executing the portions of the Works comprised in each Works Segment, no later than the Starting Date applicable to the respective Works Segment as specified in writing by the Engineer in an instruction to the Contractor to execute and complete the portion of the Works comprised in the said Works Segment."

3-5. CLAUSE 13(1) : ACCESS TO AND POSSESSION OF THE SITE

3-5.1 SUB-CLAUSE 13.(1) : GRANTING OF ACCESS AND POSSESSION

—The Employer, subject to any requirements, if any, as may be stated elsewhere in the Contract :

(a) on the Starting Date of each Works Segment, give to the Contractor, right of access to the Site of the respective Works Segment, and possession of so much of the Site as may be reasonably required to enable the Contractor to commence and proceed with the execution of the particular Works Segment in accordance with the programme referred to in Clause 15, or otherwise in accordance with such reasonable proposals of the Contractor as he shall make in writing to the Engineer: and

(b) from time to time as the Works Segment proceeds, and/or as each new Works Segment is instructed by the Engineer in terms of Sub-Clause 1 2.(2) (as applicable), give to the Contractor possession of further portions of the Site as may be required to enable the Contractor to proceed with the execution of the particular Works Segment with due despatch in accordance with the Engineer's said instruction and the said programme, as the case may be."

3-6. CLAUSE 14 SURVEY REFERENCES AND SETTING OUT

3-6.1 SUB-CLAUSE 14.(1) BASIC SURVEY REFERENCES

—The Engineer shall instruct the Contractor in writing and where appropriate, by direction on Site, as to the location and other details necessary for the Works to proceed."

3-6.2 SUB-CLAUSE 14.(4) : PROPERTY AND TRIGONOMETRICAL BEACONS

—4() Property beacons, trigonometrical survey beacons and all beacons and marks which are subject to the Land Survey Act (Act No. 5 of 1927, as amended) and which are disturbed or destroyed in the course of the Contract shall, subject to any further provisions as may be set out in the Contract, be replaced and certified by a Registered Land Surveyor in accordance with the said Act at the Contractor's cost."

3-7. CLAUSE 15 : ORDER OF WORKS AND PROGRAMME

3-7.1 SUB-CLAUSE 15.(1) ORDER OF WORKS

—The sequence and times when each of the Works Segments are to be executed shall be determined by the Engineer at his sole discretion and advised to the Contractor in writing from time to time during the course of the Contract, provided always that

(a) the Engineer shall be entitled, before instructing the Contractor in terms of Sub-Clause 12.(2) to commence with the execution of any specific Works Segment, to consult with both the Employer and the Contractor regarding mutually suitable Starting Dates for the respective Works Segments ; and

(b) the Engineer shall not order the simultaneous execution of multiple Works Segments where such simultaneous execution will result in the necessary deployment by the Contractor of plant levels in excess of those plant levels which are specified in, or as may be reasonably inferred from the Contract as to be provided by the Contractor, except only where the deployment of such excessive plant levels is the result of failure on the part of the Contractor to maintain the specified rates of progress of the Works Segments and/or any other default or breach by the Contractor; and

(c) no guarantee or warranty is given, offered or implied by the Employer in this Contract, that the Works shall be carried out in a continuous and uninterrupted manner for the duration of this Contract nor that the

Contractor will not experience periods during which no work has been ordered by the Engineer on Works Segments, and the Contractor shall have no claim against the Employer in respect of any period during which no work is executed under the Contract in consequence of the Engineer having failed to instruct the Contractor in accordance with Sub-Clause 12.(2)."

3-8. CLAUSE 24 : COMPETENT EMPLOYEES

—2() The Contractor shall employ on the Site, those employees whose curriculum vitae (if any) were provided by the Contractor in his Bid and as were accepted by the Employer, either specifically or by silence, in the Letter of Acceptance. Should any of the Contractor's employees whose curriculum vitae have been provided by the Contractor and accepted by the Employer:

(a) not be employed by the Contractor on the Site whenever reasonably required by the Engineer ; or

(b) leave the employ of the Contractor or otherwise at anytime become unavailable for deployment on the Works for any reason;

then the Contractor shall, at his own expense provide on the Works another employee whose curriculum vitae is, in the opinion of the Engineer, equal to or better than that of the employee who has become no longer available. The provisions of this Sub-Clause 24.(2) shall also apply in respect of any employee who is removed from Site in accordance with the Engineer's instructions in terms of Sub-Clause 24.(1) above."

3-9. SUB-CLAUSE 26.(2) QUALITY OF PLANT

—AllConstructional Plant listed in the Contract, or Constructional Plant equivalent thereto shall be on the Site at all times when reasonably required. The Contractor shall further bring onto the Site, without additional costs to the Employer, any additional Constructional Plant which, in the opinion of the Engineer, is necessary for completing the Contract on the Due Completion Date." Bad weather clause. (standard clause and rainfall data table)

3.10 CLAUSE 39 : VARIATIONS

3-10.1 SUB-CLAUSE 39.(3) : CHANGES IN SCHEDULED QUANTITIES

No increase or decrease in the quantity of any work specified in or as may reasonably be inferred from the Engineer's instruction in terms of Sub-Clause

1 2.(2) to commence with the execution of any Works Segment, where changes are not the result of a Variation given under this Clause but are a result of

(a) differences between number of dry holes actually encountered and those originally anticipated by the Engineer; and

(b) differences between the average depths to which it was originally anticipated by the Engineer that drilling be carried out and the depths at which a hole proves successful

shall be deemed to be a Variation Order to which this Clause applies, and unless otherwise instructed by the Engineer, no order in writing shall be required therefore."

3-11. SUB-CLAUSE 43.(1) : RATE OF PROGRESS

—Subject to the provisions of Clause 44, no instruction by the Engineer to the Contractor in terms of this sub-clause to expedite progress shall be the subject of additional compensation to the Contractor unless the instruction explicitly states that the Contractor is entitled to additional compensation and cites the amount of such compensation or the basis on which it is to be determined."

3-12 CLAUSE 45 : EXTENSION OF TIME

3-12.1 SUB-CLAUSE 45.(1) : TIME FOR COMPLETION

—Subject to any requirement in the Specifications as to the completion of any portion of the Works comprised in any Works Segment prior to the whole of the Works Segment, each Works Segment shall be completed by the Contractor within the time stated by the Engineer in his instruction in terms of Sub-Clause 1 2.(2), calculated from the Starting Date of the respective Works Segment."

3-12.2 EXTENSION OF TIME DUE TO ABNORMAL RAINFALL

If abnormal rainfall or wet conditions occur during the course of the Contract, the Employer may grant an extension of time in accordance with Clause 45 of the General Conditions of Contract, calculated in accordance with the formula given below for each calendar month or part thereof:

$$V = (Nw-Nn) + (Rw-Rn)/X$$

If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minutes Nn.

The symbols shall have the following meanings:

V = Extension of time in calendar days for the calendar month under consideration. When the value of V for any month exceeds the number of days in the particular month. V will be the number of days in the month.

Nw = Actual number of days in the calendar month on which a rainfall of Y mm or more were recorded.

Nn = Average number of days, derived from existing rainfall records, on which a rainfall of Y mm or more were recorded for the calendar month.

Rw = Actual rainfall in mm recorded on the site in an approved rain gauge for the calendar month under consideration.

Rn = Average rainfall in mm for the calendar month, derived from existing rainfall records.

X = Refer to Section 5. Contract Price Adjustment Schedule.

The total extension of time is the algebraic sum of all the monthly totals for the period under consideration, but if the total is negative, the time for completion wilt not be reduced on account of subnormal rainfall. Extensions of time for part of a month will be calculated by using pro rata values for Nn and Rn.

The factor (Nw— Nn) is considered a fair allowance for variations from the average number of days during which the rainfall exceeds Y mm.

The factor (Rw — *Rn)/X* is considered a fair allowance for variations from the average number of days during which the rainfall did not exceed Y mm but wet conditions prevented or disrupted work.

Rainfall records for relevant rainfall stations will be provided during the contract. The extension of time V will be calculated for each area for the applicable period.

3-13 CLAUSE 46 : PENALTIES

3-13.1 SUB-CLAUSE 46.(1) PENALTY FOR DELAY

—1() If the Contractor shall, by the due Completion Date of a particular Works Segment, fail to complete the whole of any Works Segment to the

extent which entitles him to receive a Certificate of Practical Completion in respect of the particular Works Segment in accordance with Sub-Clause 54.(2), then the Contractor shall be liable to the Employer for the sum stated in the Appendix as a penalty for each and every day which shall elapse between the Due Completion Date of the particular Works Segment and the actual date of Practical Completion of the said Works Segment.

The imposition of the said penalty shall

(a) apply independently in respect of each separate Works Segment; and

(b) be accumulative in respect of all Works Segments; and

(c) apply independently and in addition to any other penalty for which the Contractor may become liable in terms of the Contract; and

(d) not relieve the Contractor from his obligation to complete the Works Segment concerned and any other part of the Works or from any of his obligations and liabilities under the Contract ; and

(e) not in any way diminish the rights of the Employer in respect of any other remedies which it may have under the Contract or in Law."

3-13.3 SUB-CLAUSE 46.(3) : PENALTY FOR LATE COMMENCEMENT

If the Contractor shall, by the due Starting Date of any particular Works Segment, fail to commence with the execution of the Works Segment, then the Contractor shall be liable to the Employer for the sum stated in the Appendix as a penalty for each and every day which shall elapse between the specified Starting Date of the particular Works Segment and the actual date of commencement of the work by the Contractor.

The provisions of this Sub-Clause 46.(3) shall apply separately, mutatis mutandis in accordance with the provisions of Sub-Clauses 46.(1) and 46.(2)."

4. PROJECT SPECIFICATIONS

4.1 Application and Status

These Project Specifications describe the Works to be executed by the Contractor under the Contract and set out the requirements for the Works as well as the minimum standards to be achieved by the Contractor.

These Project Specifications are supplementary to the Standard Specifications for Drilling of Boreholes (hereinafter referred to as the "Standard Specifications") and set out variations, additions and omissions to the Standard Specifications and as such, shall be construed and interpreted in conjunction with such Standard Specifications.

These Project Specifications set out the variations, additions and omissions which shall be applicable in the Contract to the Standard Specifications and should there exist any discrepancy, conflict or inconsistency between any part of the Standard Specifications and any part of these Project Specifications, the provisions of these Project Specifications shall take precedence and prevail in the Contract.

4.2 Interpretation

Wherever reference is made within the Standard Specifications and/or these Project Specifications to the "Geohydrological Consultant" and/or the "Geohydrologist" and/or the "Consultant", it shall be deemed to mean the "Engineer" as defined in the Conditions of Contract.

Wherever reference (if any) is made within the Standard Specifications and/or these Project Specifications to the "Implementing Agent", the "Department of Water and Sanitation", "DWS" or any party not being the "Employer", the Contractor, the Engineer, the Geohydrological Consultant of the Consultant, it shall be deemed to mean the Employer.

4-3 Purpose and Scope

The Contract is for the drilling and/or the rehabilitation of boreholes for Community Water Supply, Resource Assessment, Resource Management, and Disaster Management purposes and all Works associated therewith in accordance with:

(1) the Information Provided to the Bidder as per Section 1 of this document,

(2) any further details/instructions as may be ordered by the Employer or the Hydrogeological Consultant.

The drilling services are required for a period of three years (1095 days) from the date of award and no specific quantity of work has been identified. The Contract is based on a Schedule of Rates with payment to be made on the basis of measured quantities and the bidded rates.

The Scope of Work to be actually executed by the Contractor will be as decided by the Engineer in consultation with the Employer, as provided for in the Conditions of Contract. The work to be carried out during the currency of the contract may be given as separate batches (referred to in the Conditions of Contract as "Works Segments"). Each Works Segment to be executed by the Contractor will, from time to time during the currency of the Contract, be detailed in a written instruction by the Consulting Hydrogeologist as provided for in the Conditions of Contract.

4-4 Drilling Equipment and Materials

Further to the provisions of the Conditions of Contract, the Contractor shall furnish all the particulars requested in Section 3-0 (sub-section 5-0) of this document. The capacity shall be sufficient to cope with the work as specified for the project. It shall be kept at all times in full working order and good repair. The Hydrogeological Consultant will have the right to inspect the equipment to be used prior to the commencement of the Works. If the Hydrogeological Consultant considers that the plant in use on the site of the Works is in any way inefficient or inadequate in capacity, he shall have the right to call upon the Contractor to put such equipment in order within seven days or, alternatively, to remove such plant and replace it with other plant or equipment which he considers necessary to meet the requirements of the Contract.

In the event of breach by the Contractor of this requirement, the Hydrogeological Consultant reserves the right to recommend to the Client to terminate the Contract in accordance with the Conditions of Contract.

Equipment brought onto the site may not be removed therefrom without the written permission of the Hydrogeological Consultant. It will be the responsibility of the Contractor to arrive on site with all staff, equipment, materials and chemicals required to complete the work without interruption.

Where existing equipped boreholes are to be rehabilitated, the Contractor must provide suitable plant to enable the installed pumping equipment to be removed and reinstalled. This includes the removal and reinstallation of hand

pumps, wind pumps and motorised pumps. Rehabilitation of existing boreholes may include the recovery of existing pumping equipment that was previously dropped into a borehole.

4-5 Borehole Construction -

Two borehole design options are shown in Drawings 2 and 3 in Section 6 of this document. The decision as to which of these designs or any other suitable and appropriate design to use will be made by the Hydrogeological Consultant.

Any variations from the drilling diameters specified in the Standard Specifications must be acceptable to the Hydrogeological Consultant.

The Contractor shall not use drilling media which in any way might compromise the integrity of the aquifer and/or the yield of the borehole. The Contractor must provide suitable and adequate tanks in which to mix and hold all drilling fluid.

Borehole straightness and verticality shall be judged according to the criteria set out in the Standard Specifications and Drawing 5 in Section 6 of this document.

The backfilling of boreholes will be undertaken in accordance with the criteria set out in the Standard Specifications and as illustrated in Drawings 7 in Section 6 of this document.

Formation stabiliser shall be used in accordance with the discussion presented in Standard Specifications and as illustrated in Drawing 3 in Section 6 of this document.

Each successful borehole shall be furnished with a concrete collar as described in the Standard Specifications and as illustrated in Drawing 6 in Section 6 of this document.

Unsuccessful and abandoned boreholes and lost boreholes shall be treated in the manner set out in these subsections.

Each successful borehole shall be furnished with a sanitary seal as described in the Standard Specifications and as illustrated in Drawings 2 and 3 in Section 6 of this document. The purpose of a sanitary seal is to prevent the ingress of potentially contaminated surface water into the borehole via the annular space between the borehole sidewall and the outside of the casing.

Such sanitary seal shall be constructed in-the presence of the Geohydrologist or his representative. The seal shall extend to a minimum depth of 5 m below surface, and will entail the drilling of a 305 mm diameter hole, in which a 254 mm ID steel casing (TYPE 1 sanitary seal) or 215 mm ID steel casing (TYPE 2 sanitary seal) will be placed using centralisers at the bottom to ensure that the casing is placed in the centre of the hole. In exceptional cases the Engineer may decide to alter the drilling and casing diameters, but will not exceed the aforementioned diameters. Four equally spaced flat bars of appropriate size, welded to the sides of the casing can be used as centralisers. The seal must consist of Portland Cement (quick drying) mixed to slurry with bentonite and water, which is free of oil and organic matter. The bentonite and water should be thoroughly mixed prior to adding and mixing with cement. The Contractor is to use a suitable method in placing the sanitary seal to ensure complete filling of the void between the casing and borehole. Care should be taken not to leave any voids in the sanitary seal.

4-6 Data Recording and Reporting

Data must be recorded on the borehole log and penetration rate log provided in Section 6 of this document. Penetration times per metre are to be recorded with a stopwatch, all water intersection depths and estimated yield, type of formation encountered as well as all details of both temporary and permanent casing installed in boreholes shall be recorded as a minimum requirement.

4-7 Down-the-hole Loss of Equipment

The data shall be recorded on the borehole log and penetration rate log provided in Section 6 of this document.

4-8 Rehabilitation of Existing Boreholes

Payment for additional casing inserted into the borehole shall be made as per the Schedule of Rates. This clause does not cover the return of the Contractor to a borehole previously drilled by the Contractor.

4-9 Cessation of Drilling Activities

The termination, at any stage, of drilling operations on a borehole shall rest with the Consultant.

4-10 Measurement and Payment

The Contractor appointed under this Contract is considered to be an expert in

his field and is expected to organise and carry out the required work in an expert manner. Drilling problems encountered will be overcome entirely within the framework of the Specifications and the Schedule of Rates, and no claims for extra payments will be entertained for problems foreshadowed in the Specification or due to limitations imposed by the Specifications.

The measurement of and payment for all materials and work provided by the Contractor in the course of the project will be according to the criteria as set out and are applicable in respect of such as are variously specified in the Standard Specifications and hereunder:

4-10-1 Standing Time

This will cover periods when the Contractor's drilling rig and crew or, if more than one rig and crew are fielded, when all rigs and crews are idle waiting for decisions by the Consultant where those decisions or whose presence is required before the commencement or continuation of the work. Under no circumstances will standing time be payable for any delays other than those incurred by the Hydrogeological Consultant's decisions. Except only for abnormal weather conditions as provided for in Sub-Clause 47.(2) of the Conditions of Contract, no standing time will be payable due to inclement weather or prevention of access to a site by the Contractor or Hydrogeological Consultant due to inclement weather. Further, no standing time will be payable to the Contractor in respect of any periods where the Contractor is not engaged in the execution of the Works as a result of the Consultant having failed to issue an instruction to commence with the works of any Works Segment and there being no other Contract Works on which the Contractor is required to carry out work.

The Contractor must make provision for one-hour standing time per borehole to allow for the measurement of groundwater levels and the determination of optimum casing installation (plain and slotted). Since no separate payment will be made for standing time (up to 1 hour) resulting from these activities, the Contractor must allow for this.

4-10-2 Inter-hole Moves

Payment for inter-hole moves up to a distance of ten kilometres shall be made at the unit rate bidded for in the Schedule of Rates. Inter-hole moves in excess of ten kilometres shall be remunerated for the first ten kilometres at the bidded unit rate and, for each full kilometre thereafter, at the rate per kilometre bidded in the Schedule of Rates.

4-10-3 Reaming of Boreholes

Where a borehole has previously been drilled to a smaller diameter than that required, the original borehole should be reamed to the required diameter. Reaming of a borehole to larger diameters may also be required for borehole construction purposes. Remuneration for this work shall be according to the rates bidded in the Schedule of Rates.

4-10-4 Removal of Existing Pumping Equipment

This rate shall cover the removal of existing pumping equipment in a borehole to be rehabilitated and secure storage of removed existing equipment. Payment for removal up to an installed depth of 50 m shall be made at the unit rate bidded for in the Schedule of Rates. Installed depths in excess of 50 m shall be remunerated for the first 50 m at the bidded unit rate and, for each full metre thereafter, at the rate per metre bidded in the Schedule of Rates. The Contractor is solely responsible for the secure storage of removed equipment to prevent theft of existing equipment from site.

4-10-5 Re-installation of Existing Pumping Equipment

This rate shall cover the re-installation of existing pumping equipment in a borehole following rehabilitation of the borehole. Payment for installation up to a depth of 50 m shall be made at the unit rate bidded for in the Schedule of Rates. Re-installation depths in excess of 50 m shall be remunerated for the first 50 m at the bidded unit rate and, for each full metre thereafter, at the rate per metre bidded in the Schedule of Rates. The existing pumping equipment shall be restored to its working condition as encountered before removal unless the Contractor is instructed otherwise by the Hydrogeological Consultant.

4-10-6 Labour-based Methods to Prepare Access to Site

The use of labour-based methods required to prepare access to a site (bush clearing and/or limited road making) must be approved by the Hydrogeological Consultant. Labour required for such work must be employed from the local community with whom the number of man days required for the task is to be negotiated and finalised prior to gaining approval from the Hydrogeological Consultant. Contractors must always keep in mind that the minimum wages payable to labourers must at all times adhere to —Minimum Wage Legislation" for the particular area.

5. STANDARD SPECIFICATIONS FOR BOREHOLE DRILLING

5-1 Purpose and Scope

Simply stated, the purpose of this activity is to establish a means to access and tap groundwater resources. This is most often provided by the drilling of a borehole. It is not sufficient for this facility to represent just another hole in the ground. It is vital that the borehole be constructed and completed to certain minimum standards in order to secure the long-term viability and serviceability of the installation. This component of the project is served jointly by the Hydrogeological Consultant and the Drilling Contractor. It is therefore expected of these parties to function as a team within the framework of their individual briefs as set out in their respective contract agreements with the Implementing Authority.

5-2 Approach and Responsibility

In general, it is required that the drilling of any borehole be approached with due diligence and care on the part of the appointed drilling contractor(s). Specifically, it is required that the drilling of each borehole be approached in a cost effective manner to establish a water supply. In some instances boreholes may be drilled for exploration and/or resource monitoring purposes. Under normal circumstances, the pre-drilling of a 165 mm diameter exploration borehole is drilled and the borehole is reamed to larger diameters for construction purposes. In leached/cavernous carbonate rock areas drilling normally commences with larger diameters, to limit reaming of boreholes and allow for telescope borehole construction.

The Drilling Contractor(s) will function under the direct supervision of the Hydrogeological Consultant. This by no means implies that the Drilling Contractor(s) is absolved from any responsibility. All drilling activities will, therefore, be approached through communication and discussion between the Hydrogeological Consultant and the contractor(s) with a view to developing the most suitable and mutually acceptable finished product serving the best interests of the project. The fact that the Drilling Contractor is also appointed for the skills which he can offer the project and is often able to provide, from experience, practical approaches and solutions to specific problems must be recognised and accepted by the Hydrogeological Consultant.

Failure by the contractor(s) to timeously render advice and input where required will be regarded as a dereliction of duty. This responsibility extends to informing the Hydrogeological Consultant of serious reservations regarding any aspect of the work. The contractor(s) will also be required to maintain the

aesthetic appearance of the site during drilling operations, including keeping the site neat, tidy and free of litter. More importantly, the contractor must ensure that safety standards are met and that the work site is kept free, as far as is possible, from vehicular and pedestrian traffic and from interested bystanders and onlookers not involved with the project.

In essence, the final responsibility for the finished water supply borehole and all actions and activities leading up thereto must be carried jointly by the Hydrogeological Consultant of the Executive Agency and the appointed Drilling Contractor(s).

5-3 Techniques

The most common method employed for the sinking of a water supply borehole is that of rotary air percussion drilling employing a down-the-hole (DTH) hammer. This drilling technique is ideally suited to hard rock formations and therefore finds wide application in most of the geological environments encountered in South Africa. Other techniques which will be applied depending on site-specific circumstances include: (1) Odex drilling, (2) mud rotary drilling, (3) Symmatrix drilling, (4) uger drilling and (5) cable tool percussion drilling. Method (1) represent technically more sophisticated techniques, which find specific application in loose and unconsolidated materials. Method (2) employs the familiar jumper rig, its most useful application being the cleaning and rehabilitation of existing boreholes.

In light of the above, the preferred drilling technique to be employed on community water supply projects is that of rotary air percussion.

5-4 Equipment and Materials

The equipment made available by the Drilling Contractor must be in good working order. It must also be maintained in good condition for the duration of the project. In order to achieve this, time should be set aside each week for the routine service and preventative maintenance of all equipment (subsection 5). The drilling equipment must include a full air/foam pumping system. At the start of the project, the gauge diameter of the button drill bits to be employed with the rotary air percussion drilling technique must conform closely to their manufactured gauge and must also possess all of their tungsten carbide buttons.

The Hydrogeological Consultant will discuss with the Drilling Contractor the retirement of a bit due to excessive wear or damage incurred during the course of the project. Further, it is imperative that the equipment be of a suitable size and capacity to deal, on occasion, with: (1) deep boreholes (up

to 300 m), (2) larger than average borehole diameters (up to 305 mm), (3) large quantities of groundwater and (4) potentially onerous drilling conditions. Since this capability is provided in large measure by the air compressor, it is considered that a compressor having a capacity of at least 2400 kPa (24 bar) and a volume of at least 750 cfm is appropriate for most water borehole drilling applications and conditions using the rotary air percussion technique. In order to maintain the straightness of a borehole, the Hydrogeological Consultant may insist that the Drilling Contractor employ at least an overshot sleeve (drill collar) fitted to the pneumatic DTH hammer. Further precautions to ensure this aspect might include the use of a stabiliser rod immediately behind the bit/hammer/overshot combination. All materials to be used on the project should be new and meet project specifications. This applies particularly to steel casing, which shall be: (1) of the seam-welded type, (2) round, (3) straight, (4) of uniform wall thickness and (5) have bevelled edges. Second-hand material such as steel casing recovered from an earlier borehole can be used provided that it has been refurbished to an acceptable condition (refer to subsection 5.6f). The Hydrogeological Consultant will have the right to reject, with motivation, any material (including casing) which is deemed inappropriate, substandard or otherwise unsuitable for the project.

5-5 Workmanship and Performance

The standard of workmanship of the Drilling Contractor will be subject to close scrutiny by the Hydrogeological Consultant. Many aspects thereof are of a subjective nature and not readily quantifiable. Every attempt must, therefore, be made to render this beyond possible criticism. Judgment of the performance of the Drilling Contractor in the execution of assigned work is similarly of a subjective nature. Although it cannot be expected of the contractor to complete a specified number of boreholes in a given time period, it is reasonable to expect that "favourable progress" be made under normal circumstances and drilling conditions. An indication of what might be regarded as "favourable progress" is considered to fall in the range of 50 to 100 m of drilling advancement per day taking into consideration inter-hole moves and set-up time. Performance being related to efficiency and efficiency in turn being a function of, amongst other factors, the number of mechanical equipment breakdowns suffered by the contractor, it will be in the best interests of the contractor to set aside time for the routine preventative maintenance of equipment. If the contractor is inclined to work a 6 or 7-day week, it is preferred that maintenance activities be scheduled for the weekends. Such schedule must be communicated to the Hydrogeological Consultant. This party may insist that the Drilling Contractor does not start with the drilling of a borehole over a weekend. Although work-in-progress may be completed, the contractor shall under no circumstances vacate a site

before the Hydrogeological Consultant has inspected the completed works and sanctioned the move to the next borehole.

5-6 Borehole Construction

The extremely diverse nature of subsurface conditions, sometimes over very short distances, renders it virtually impossible to address this aspect in great or specific detail. This factor also rules out standardisation in this regard. It is possible, however, to address certain basic borehole construction practices which will contribute to final acceptance of the successfully finished product.

(a) Drilling Diameter

Drilling diameters will be 152 mm (6”), 165 mm (6,5”), 203 mm (8”), 254 mm (10”) and 305 mm (12”) for rotary air percussion drilling. Odex drilling diameters will be 194 mm, 219 mm or 273 mm OD. Any variations must be acceptable to the Engineer.

The minimum final cased diameter of a successful community water supply borehole shall not be less than 152 mm nominal.

The contractor will be remunerated for drilling per linear metre of depth at the rate bidded for each relevant drilling diameter employed as set out in the Schedule of Rates.

(b) Steel Casing

Note: All steel casing supplied must conforms to SABS 719 and SABS 62.

Steel casing may either be used in a temporary manner or form a permanent part of the borehole infrastructure. Its temporary use is indicated in instances where, for example, the borehole is unsuccessful or the need for it to remain in place becomes redundant. Under these circumstances it is also referred to as a pre-collar, surface casing, starter casing, outer casing or soil casing generally to be removed (recovered) on completion of drilling. The removal of temporary/starter casing to a depth of 5 m will not be a payable item under recovery of steel casing. It will be left in place where the Hydrogeological Consultant is of the opinion that the unsuccessful borehole should be secured to serve a long-term groundwater monitoring purpose. In such instances, additional provision must be made to protect the borehole against actions, which may compromise this function.

More commonly, however, this casing constitutes the final casing with which a successful borehole is equipped/constructed. Its proper installation, therefore, is mandatory. It is installed from surface through unstable, unconsolidated or fractured materials usually occurring in the near surface. Under these circumstances, the function of steel casing includes one or more of: (1) supporting unstable materials against collapse into the borehole during drilling, (2) facilitating the installation or removal of other casing, (3) minimizing the erosion and widening of the unstable upper portions of the borehole sidewall caused by the return flow established during drilling and/or the passage of drilling equipment/tools and (4) facilitating the placement of a sanitary seal and/or gravel pack or formation stabilizer. The casing must conform to the specifications set out in subsection 5-4.

In order to ensure as far as is possible that the annular space between this casing and the borehole sidewall remains open for the later emplacement of a sanitary seal, the circumferential entrance to this space must be temporarily plugged. Hessian sacking packed around and lightly tamped into the surface entrance to this annular space can be used for this purpose. In instances where steel casing needs to be driven through unstable horizons (generally at greater depths in a borehole), it will also be required that such casing be fitted with a casing shoe to protect the "mouth" of the casing from damage (subsection 5-6.c). Irrespective of the casing used to facilitate the drilling of the borehole, the final cased diameter of the finished product must be sufficient for the borehole to easily accept a borehole pump. Since the outside diameter of the latter is generally in the order of 1 00 mm, it is required that the final cased diameter of the borehole be not less than 152 mm (6 in.) nominal where steel casing is used.

The Drilling Contractor will be remunerated for steel casing per linear metre thereof supplied, delivered and installed at the rate bidded for each relevant casing diameter as set out in the Schedule of Rates.

(c) Casing Shoe

This item is fitted (welded) to the bottom end (foot) of a casing string in order to protect the "mouth" of the casing from damage due to forcing the casing through unstable horizons. Its use is therefore only warranted (indeed mandatory) in instances where such conditions reveal themselves to require securement through the emplacement of casing.

The Drilling Contractor will be remunerated for each casing shoe supplied and used at the rate bidded for each relevant shoe diameter as set out in the Schedule of Rates.

(d) uPVC Casing

Also referred to as thermoplastic casing, the material generally comprises PVC (polyvinyl chloride) which, when treated to withstand ultraviolet radiation, is known as uPVC casing. Its application in the construction of community water supply boreholes is rather specific, being used mainly in instances where security against the collapse of a borehole sidewall is required and where steel casing does not already offer such security. In such instances, the casing is inserted the entire length of the borehole and will certainly be perforated for some portion of its length.

The diameter of this casing will also necessarily be smaller than that of the steel casing used which, in most instances, will have a nominal diameter of 165 mm. In order not to compromise too severely on the minimum nominal diameter requirement of 152 mm for successfully completed community water supply boreholes (subsection 5-6.b), the inside diameter of the uPVC casing shall not be less than 127 mm with a wall thickness of 6 mm. It is also common practice to leave the steel casing in place in order to provide protection for the uPVC casing. The decision to use uPVC casing in the final construction of a borehole shall be made by the Hydrogeological Consultant.

The Drilling Contractor will be remunerated for uPVC casing per linear metre thereof supplied and installed at the rate bidded for each relevant casing diameter as set out in the Schedule of Rates.

(e) Perforated Casing

Also referred to as slotted casing, this is used in instances where a casing string inserted into a borehole will extend across a water-bearing horizon. The perforations or slots will allow the groundwater to enter the borehole. Perforations can be made in a number of ways ranging from prefabricated machine- or plasma-cut slots to hacksaw, angle grinder or oxyacetylene torch-cut slots made in the field. The latter type of slots are seldom satisfactory since it is difficult to produce perforations which are: (1) of uniform size, (2) clean, open and free of restrictions and (3) small enough to control the ingress of finer material

into the borehole. It is therefore preferred that perforated casing used in the construction of community water supply boreholes be of a prefabricated type. As a general guideline, slots should be: (1) 300 mm in length, (2) 3 to 4 mm wide, (3) positioned in bands around the circumference of the casing, (4) spaced equally in each band, (5) each circumferential band of slots separated by 100 mm of plain pipe, (6) every second band of slots aligned with one another, and (7) a 300 mm section of plain pipe left at both ends of the casing. This slot pattern is illustrated in Drawing 4 (Section 6). Bearing in mind that the number of slots forming each circumferential band depends not only on the casing diameter but also impact on the strength of the casing, it is suggested that the guidelines presented in Table 5-1 be adhered to in this regard.

Table 5-1 Recommended number of slots per circumferential band for various steel casing diameters and associated per centage open area provided

NORMAL CASING DIAMETER	NUMBER OF SLOTS PER CIRCUMFERENTIAL BAND	PER CENTAGE OPEN AREA
152mm	6	3,0%
165 mm	8	3,7%
203 mm	10	3,7%

Also presented in this table is the approximate open area provided by the above slot pattern applied to each of the given casing diameters. In certain instances, however, it may be required to use more sophisticated and expensive slotted casing. Also known as screens, these include: (1) continuously wound wedge wire screens, (2) louvered screens or bridge-slotted screens and (3) screens pre-coated with gravel. The decision to use such screens shall again be made by the Hydrogeological Consultant after providing motivation to and gaining acceptance from the Implementing Authority.

The Drilling Contractor will be remunerated for perforated casing per linear metre thereof supplied and installed at the rate bidded for each relevant casing diameter as set out in the Schedule of Rates.

(f) Recovery of Steel Casing

The contractor shall make every effort to recover, only on instruction of the Hydrogeological Consultant, steel casing from unsuccessful or abandoned boreholes. This casing can also be refurbished to an acceptable condition for reuse.

The Drilling Contractor will be remunerated for the recovery of steel casing per linear metre thereof salvaged from a borehole as per the rate bidded in the Schedule of Rates. The removal of temporary/ starter casing to a depth of 5 m not be a payable item to the contractors.

Payment for the proper refurbishment of such casing shall be made on a time basis against bidded standing time rates subject to verification and certification of the amount/duration of this work by the Hydrogeological Consultant.

(g) Borehole Straightness

The straightness (alignment) of a borehole is defined by the degree to which it deviates along its length from an imaginary centre line drawn through the borehole. This is readily determined by passing a —dummy" or —dolly" through the borehole. The equipment comprises a rigid hollow steel pipe having an outside diameter which is smaller by not more than 20 mm than the inside diameter of the final casing. Caution should be exercised when conducting a straightness test in an uncased or partially cased borehole since irregularities in the borehole sidewall may cause the —dummy" to become jammed. Since the casing string is normally constructed from six-metre lengths, it is required that the —dummy" itself have a length of at least six metres in order to adequately —straddle" casing joints. This equipment must form part of the standard equipment supplied by the Drilling Contractor. It must also be readily available since the Hydrogeological Consultant may request a straightness test at any stage during drilling. The —dummy", suspended from a flexible steel rope (normally the hoist line with which most drilling rigs are equipped), is slowly lowered down the borehole.

The borehole will be considered straight if the —dummy" passes down the entire length of the borehole and can be withdrawn without it binding or becoming stuck in the borehole. The straightness test must be performed by the Drilling Contractor in the presence of the Hydrogeological Consultant and its success (or failure) recorded by this party.

A borehole which fails a straightness test will be deemed lost (subsection 5-6.1) and it will be required of the Drilling Contractor to drill a replacement borehole at own expense. In the event that a straightness test is made before completion of the borehole, then the contractor will be required to cease operations and facilitate access to

the borehole for the duration of such activity. The contractor will recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate bidded for standing time in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the Drilling Contractor in this regard.

(h) Borehole Verticality

This represents the plumb ness of the borehole as measured by the deviation of the centre of the borehole from the vertical at any depth within the bore. The deviation must not exceed two thirds of the borehole diameter (casing inside diameter) per 30 m of depth. Although the SABS 045-1974 standard code of practice for testing water boreholes (including for verticality) has been withdrawn, the nature and form of the apparatus to be used for this purpose remains valid. Drawing 5 in Section 6 of this document illustrates the equipment.

The equipment comprises a tripod (shear legs), a plumb-bob and a flexible wire line. The plumb-bob must be fitted with a centre-mounted spindle at one end and a centralising device on its circumference. The tripod is erected over the borehole such that its apex is above the centre of the borehole. The wire line is passed through a small pulley mounted at the apex. The plumb-bob, suspended from the wire line, must hang vertically from the pulley such that the wire line passes exactly through the centre of the borehole when the plumb-bob is centrally positioned within the mouth of the casing (tolerance 3 mm). The vertical distance from the pulley to the top of the casing must be measured accurately (tolerance 0,01 m). This distance must not be less than 2,4 m. The plumb-bob is then lowered in equal increments (generally 3 m) down the borehole. The deviation of the wire line measured in millimetres from the centre of the casing must be determined at each depth increment and the measurements recorded on a data sheet. This procedure must be continued for the entire length of the borehole. The measured deviation of the wire line from the centre of the mouth of the casing at each depth increment indicates the drift (Ø) of the plumb-bob. The measured deviation is used together with a deflection factor (D_f) to calculate the actual deflection (D_a) of the borehole from the vertical at each depth increment according to the equation:

$$D_a = Ø\ (d + h)/h$$

where Ø = the measured drift (in millimetres) of the wire line at a given

plumb-bob depth,
d = depth of plumb-bob below casing collar (in metres) for each drift (Ø) measurement,
h = vertical distance between the casing collar and the pulley (at the tripod apex) over which the wire line passes (in metres), and
(d + h)/h represents the deflection factor (D_f).

The wire line deviation measurement is most accurately performed if a revolving template with a graduated radial slot is mounted directly over the collar of the casing. The slot is graduated in millimetres outwards from the centre of the template. The template is revolved until the wire line passing through the slot hangs free and straight in the slot and its deviation from the centre read off on the graduated slot.

The verticality test must be performed by the Hydrogeological Consultant in the presence of the Drilling Contractor. The consultant will therefore be required to provide the necessary equipment for conducting a verticality test. A borehole which fails a verticality test will be deemed lost (subsection 5-6.ℓ) and it will be required of the contractor to drill a replacement borehole at own expense. In the event that a verticality test is made before completion of the borehole, then the Drilling Contractor will be required to cease operations and facilitate access to the borehole for the duration of such activity.

The contractor will recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate bidded for standing time in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the Drilling Contractor in this regard.

(i) Backfilling

This entails filling the annular space between the borehole sidewall and the outside of the casing with suitable material. The purpose of annular backfilling includes: (1) the provision of a base on which to found a sanitary seal and (2) the provision of support for the sidewalls of the borehole and the casing. In instances where casing has been seated at a comparatively shallow depth in fresh material below a weathered near-surface horizon, all of the drill cuttings removed from the borehole whilst drilling represents suitable material for this purpose. Annular backfilling with this material is not advisable in instances where this is not the case, such as for example where the casing extends to a substantial depth and comprises slotted/perforated sections or where the water-bearing horizon is shallow and open to the borehole via

slotted/perforated casing. In these instances, it will be required to insert a formation stabiliser into the annulus. The backfilling must extend to within approximately 5 m of the ground surface.

The Drilling Contractor will be remunerated for backfilling against the standing time rate (which shall include the supply and insertion of material required therefore) bidded for in the Schedule of Rates.

(j) Formation Stabiliser

This comprises material which is placed in the annulus between the borehole sidewall and perforated/slotted sections of casing to stabilise the formation against collapse and ingress into the borehole. The drill cuttings and spoils removed from the borehole is not suitable material for this purpose. The stabiliser must comprise material which is: (1) well sorted, (2) well rounded, (3) low in calcareous content, and (4) graded such that the smallest grain size is larger than the casing perforations/slots. The stabiliser material can either be placed by hand or through a tremie pipe. Excessive bridging of stabiliser material in the annulus can be prevented: (1) through the use of centralisers on the casing or (2) by washing it in with clean water. The formation stabiliser should extend some 10 m above the top of the uppermost perforated/slotted section of casing before the borehole is developed.

The Drilling Contractor will be remunerated for formation stabiliser per 20 litre container supplied and installed at the rate bidded for in the Schedule of Rates.

(k) Concrete Collar

The Drilling Contractor will construct a shallow circular concrete collar around each successfully completed borehole. This collar shall have the dimensions set out in Drawing 6 (Section 6) yielding a volume approaching 0,08 m^3. The concrete mixture shall consist of water, Portland cement, stone aggregate (10 mm) and river sand. Quantities of these materials sufficient to make 0,1 m^3 of concrete with the required strength of some 30 MPa after 28 days are: (1) 20 litre of water, (2) 42 kg (0,8 bag) of Portland cement, (3) 0,07 m^3 of stone aggregate, and (4) 0,07 m^3 of river sand. A similar collar may need to be constructed, on request off the Hydrogeological Consultant, over unsuccessful or abandoned boreholes as per Drawing 7, Section 6.

The contractor will be remunerated for a concrete collar per unit constructed at the rate provided in the Schedule of Rates, which rate

shall include for the transport, supply, mixing and placement of all the materials required.

(l) Unsuccessful and Abandoned Boreholes

A borehole will be declared unsuccessful at the discretion of the Hydrogeological Consultant. The latter may also, at any time during the course of the work, order the abandonment of a borehole in progress.

In such instances, the Hydrogeological Consultant must instruct the Drilling Contractor on further actions to be taken. These may include either: (1) the salvage of any casing from the borehole and (2) the plugging of the borehole or (3) the securement of the borehole for long-term monitoring purposes, in which case it will be provided with a sanitary seal (subsection 5-6.n), concrete collar (5-6.k), protection (5-6.q) and marking (5-6.r).

Plugging (or finishing) of an unsuccessful or abandoned borehole is aimed at removing any danger or hazard such boreholes may present to the environment, e.g. as a conduit for the inflow or surface water into the groundwater regime or as a danger to traffic (whether human, stock or vehicular) in the immediate vicinity thereof. This is achieved by shovelling the drill cuttings and other suitable natural material back into the unsuccessful borehole. In order to prevent this material from —hanging" in the borehole, it might be required to periodically wash it in with clean water during the infilling process. Once the infill material extends to the ground surface, it must be compacted by tamping it down manually and any subsidence topped up with fresh backfill material. The compacting and topping up activities should be repeated until assurance can be had that all reasonable precaution has been taken to prevent future subsidence. It will also be required to cast a concrete collar over the infilled borehole (subsection 5-6.m). This process is illustrated in Drawing 7 of Section 6.

The Drilling Contractor will be remunerated for an unsuccessful or abandoned borehole on the basis of bidded rates in the Schedule of Rates for such of the following items as are relevant: (1) drilling per linear metre of depth for each relevant drilling diameter employed, (2) steel casing per linear metre thereof recovered excluding starter casing to a depth of 5 metres, (3) backfilling, (4) a sanitary seal, (5) borehole protection, and (6) borehole marking. Payment for any casing left behind in an unsuccessful or abandoned borehole will only be made, on the same basis as described in (2) above, on written certification by the Hydrogeological Consultant that the contractor has made every reasonable recovery attempt in this regard.

(m) Lost Boreholes

A borehole will be declared lost by the Hydrogeological Consultant in the event that it can not be completed satisfactorily due to factors such as: (1) the irrecoverable loss of drilling equipment, materials or tools therein, (2) accident to plant or heavy machinery, (3) failure to pass a straightness test, and (4) failure to pass a verticality test. A decision in this regard must be made after consultation with the Drilling Contractor, who will have the considered option to either attempt remediation of the situation to the satisfaction of the Hydrogeological Consultant or, alternatively, declare the situation irretrievable. No payment shall be made for any work done, materials used or time spent by the Drilling Contractor on a lost borehole. The cost of any materials recovered in a damaged state from a lost borehole will be borne by the contractor.

A borehole which is declared lost shall be replaced with a new borehole to be constructed by the Drilling Contractor in the vicinity of the lost borehole and at a position indicated by the Hydrogeological Consultant. Payment for a new borehole constructed under these circumstances shall be made on the same basis as for any other successfully completed borehole. Materials recovered in good condition may, however, be re-used by the contractor.

(n) Sanitary Seal and Grouting

The purpose of a sanitary seal is to prevent the ingress of potentially contaminated surface water into the borehole via the annular space between the borehole sidewall and the outside of the casing. It is required, therefore, that every successful community water supply borehole be provided with a sanitary seal. The seal must consist of Portland cement mixed to slurry with bentonite and water, which is free of oil and other organic matter. The bentonite and water should be thoroughly mixed in the ratio of 2 kg bentonite to 25 litre water prior to adding and mixing in 50 kg (one bag) cement. The final grout seal must extend to a depth of at least 5 m below ground surface. The seal is preferably placed at the beginning of the drilling process after a 5 m deep 305 mm hole has been drilled and cased with 254 mm ID steel casing (type 1 sanitary seal) or with a 215 mm ID steel casing (type 2 sanitary seal. After placing the casing and centring the hole, an amount of bentonite, cement and water grout, adequate to fill the entire annulus between the casing and the wall of the borehole, is tremied into the casing. The slurry can be gravity-fed into the annulus through a small diameter tube (tremie pipe) extending to the depth of emplacement. The tremie pipe should be withdrawn slowly as the slurry

fills up the annulus.

Care should be taken not to leave voids in the sanitary seal. These may result from: (1) channelling caused by casing which is not centred in the borehole, (2) an improperly mixed slurry which contains lumps and (3) an annular space which is too small to assure a uniform thickness of seal.

The Drilling Contractor will be remunerated for a sanitary seal per linear metre thereof against the rate bidded in the Schedule of Rates. This rate will include for the supply, delivery, mixing and installation of all material for type 1 and type 2 sanitary seals.

(o) Borehole Development

This activity entails flushing all loose material from the borehole upon the completion of drilling. This material might comprise one or more of: (1) drill cuttings resting on the bottom, (2) loose material forming insecure portions of the borehole sidewall, (3) clayey material —plastered" to the borehole sidewall during the drilling process, and (4) fine material which has collected behind screened portions of the borehole. The removal of this potentially —clogging" material often leads to an improvement in the yield of the borehole. The most common borehole development technique used simply entails repeatedly running the drill bit up and down in sequential passes across portions of the borehole with the compressed air turned open. The length of each pass will be dictated by the length of the drill rods used by the contractor. The process is normally performed from the bottom up, one drill rod being removed from the drill string upon development of the preceding (lower) section.

The borehole will be deemed sufficiently developed when very little or no material is brought to the surface in the return flow from the borehole as evidenced by collecting a portion of this flow in a bucket placed at the bore head during development. Other methods, which may be employed, for borehole development includes: (1) surge plunging using a surge block and (2) jetting using a purpose-built jetting tool. This activity must be concluded with the collection of a one-litre representative water sample obtained from the return flow during development.

The Drilling Contractor will be remunerated for borehole development on a time basis against the work time rate bidded in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the contractor in this regard.

(p) Borehole Disinfection

Also known as sterilisation, the purpose hereof is to disinfect the borehole and its contents of any bacteria, and particularly coliform bacteria, introduced into the borehole during drilling operations. Sterilisation is most readily accomplished by introducing chlorine (or chlorine-yielding compounds) into the borehole. On completion of development the borehole shall be disinfected with a solution of 0.5 kg of HTH mixed in 250 litres of water.

The Drilling Contractor will be remunerated for borehole disinfection per single application at the cost (which shall include for all materials supplied and used and the time spent) bidded for one such application as set out in the Schedule of Rates.

(q) Borehole Protection

This entails sealing the borehole from the introduction of foreign material directly through the casing. It is often achieved by means of a lockable cap fitted to the borehole collar. Experience suggests, however, that a 3 to 4 mm thick steel plate (lid) welded onto the borehole collar ensures better security. Of course, it will later be required of the Testing Contractor to remove this plate in order to gain access to the borehole for testing purposes. In order to provide the Hydrogeological Consultant with ready access to the borehole for water level measuring purposes, it is required that a small hole be drilled in the lid. This hole must be furnished with a tamper-proof plug such as a —dead-end" threaded into a water pipe connector welded on the hole. The final diameter of the hole providing access to the borehole must be sufficient to allow a —normal" dipmeter probe to pass through it. It is considered that a diameter of at least 10 mm and not more than 20 mm is suitable for this purpose.

The Drilling Contractor will be remunerated for borehole protection per single installation at the cost (which shall include for all materials supplied and used and the time spent) bidded for one such installation as set out in the Schedule of Rates.

(r) Borehole Marking (in the field)

For all Community Water Supply and Sanitation projects, the borehole identifying number will be provided by the Directorate Geohydrology of the DWS, or else by the Implementing Authority. It is the responsibility of the Hydrogeological Consultant to ensure that the correct number is provided to the contractor for this purpose. The consultant will be

responsible for securing a batch of numbers and pass these on to the Contractor as is deemed fit and appropriate.

The activity itself represents marking the borehole by: (1) script-welding its assigned and unique identifying number onto the lid of the borehole and (2) planting a concrete block with dimensions of 200 mm x 200 mm x 200 mm in the ground with a pole (see specifications in drawing) bearing the number of the borehole at a distance of five metres to the north of the borehole.

The Drilling Contractor will be remunerated for borehole marking per single application at the cost (which shall include for all materials supplied and used and the time spent) bidded for one such application as set out in the Schedule of Rates.

(s) Site Finishing

The activities associated with this task must include the repair of construction scars on the work site resulting from drilling activities, as well as the general clean-up of the site of waste materials, debris and oil spills. The latter must be shovelled over and worked into the ground wherever possible. The Drilling Contractor will be remunerated for site finishing per single application at the cost (which shall include for the time spent) bidded for one such application as set out in the Schedule of Rates.

(t) Sealing and Capping of Artesian boreholes

Ensure that the well is closed in such a manner that there is no leakage at the surface of the ground. The driller must be prepared to handle the flow from the well and the discharge of any plugging materials immediately on removal of the flow control device(s). The work site can be dangerous if the flow is not properly diverted. Closing a flowing artesian well is simplified if the flow can be overcome by extending the well casing above the artesian head. Alternatively, insert an inflatable packer or expandable rubber plug at the bottom of the casing. Physically stopping the flow may make things worse, however, which is why the rapid loading of drilling gel is often a better approach.

Use of appropriate grouting material is key to constructing a flowing artesian well. It will be the responsibility of the Hydrogeological Consultant to verify and certify any claim by the contractor in this regard.

The cement mixture is pumped until it reaches the land surface. Pressure grouting with a packer may be required. It may also be good

to pull or perforate some of the casing to allow the grout to flow from the casing into the annulus, although this is not critical if the casing is already perforated or corroded.

5-7 Data Recording and Reporting (add flow rate)

It is imperative that a detailed and accurate record of all information arising from the borehole drilling activity be recorded with care and diligence. Much of this information can be collected by the Drilling Contractor. It must be recorded on a driller's log such as is provided in Section 6. This must be kept current and available for inspection at request of the Hydrogeological Consultant. The contractor will include the cost of these activities as a single sum per borehole in the Schedule of Rates. It will be the responsibility of the Hydrogeological Consultant to verify receipt of this information prior to certifying a claim by the Drilling Contractor in this regard. The following items of information represent the minimum number of parameters, which must be monitored and recorded by the contractor.

(a) Penetration Rate

This represents the time taken, as measured with a stopwatch, to advance the borehole a specific depth (generally one metre). In broad terms, the harder the rock formation the slower the penetration rate and vice versa. Since the hardness (or softness) of a rock formation is a characteristic which can be associated with specific rock types, an accurate record of penetration rates serves as an additional means of identifying changes in rock type with depth. Although a slow penetration rate may be of hydrogeological significance, it can also be caused by worn equipment or difficult drilling conditions such as are presented by loose, unstable material. The measured penetration rate must, therefore, not include time spent overcoming technical problems or remedying mechanical breakdowns encountered during drilling.

(b) Formation Sampling and Description

This entails a brief description of the visual appearance of the rock formation being drilled. It is performed by inspection of the rock chips (also known as drill cuttings) brought to the surface during drilling. A spadeful of chips should be collected at the mouth of the borehole for each metre drilled. The —samples" should be placed as sequential piles in ordered rows at a cleared and visible location away from the immediate area of activity and traffic around the borehole being drilled. If instructed by the Hydrogeologist a fist full of each sample should be

bagged in individual plastic bags labelled with the borehole number and sample depth. These samples should be kept at a pre-arranged location for description at a later stage. The samples should be described by a suitably qualified geotechnician/earth scientist according to the guidelines set out by the South African Institute for Engineering Geologists (SAIEG, 1 995). The driller‘s description must include, as a minimum, a note on the colour of the formation, the relative size of the drill cuttings and, if possible, an identification of the possible rock type.

(c) Water Strike Depth

This information relates to the depth at which any water, including seepage, is encountered in a borehole during drilling. It is possible for water to be encountered at more than one depth as drilling advances. The depth(s) at which water is encountered must be determined to an accuracy of one metre and recorded. It is also necessary to record the nature of the formation associated with the water strike(s). This may, for example, be represented by a single fracture of fissure, a system of such features or a noticeably softer or more weathered horizon.

(d) Blow Yield

Water which is encountered in a borehole being drilled by the rotary air percussion method is blown out of the borehole during drilling. The amount of water being blown from the borehole provides an indication of the possible yield of the borehole. The blow yield must not be guestimated, even though a fair visual estimate based on experience can often be provided by the Drilling Contractor. Also, since water may be encountered at more than depth, it is necessary to measure and record the blow yield immediately following each water strike. These measurements should be repeated as drilling continues until constancy is revealed by at least four consecutive measurements each representing a further metre of drilling.

The accurate measurement of the blow yield does not require the use of sophisticated equipment. The most acceptable and preferred means of measurement is provided by the use of a 90° V-notch weir, details of which are provided in Drawing 8, Section 6. The use of a 90° V-notch weir entails channelling all of the water being blown from the borehole through such a weir, which has been placed level in the channel (or ditch) leading the return water flow away from the borehole being drilled. The height of water flowing over the notch is translated into a flow rate or yield as indicated in Table 4-2. It is imperative that the height of water flowing over the weir is not measured within the notch

itself but at and from a position in the weir upstream and to the side of the notch and which corresponds exactly in height to the inverted apex of the notch.

IMPORTANT INFORMATION

The Department reserves the right to deal with the Contractor and his principals throughout the duration of the contract.

The services are required for a period of three years from the date of award and no specific quantity of work has been identified. Orders will be placed as required by the Regional Offices, Agriculture, Environmental, Implementing Agents, Local Government, Health, Public Works, Education and the Municipalities of South Africa over 3-year period.

Table 5-2 Tabulation of height vs flow rate data for a 90° V-notch weir

HEIGHT (mm)	FLOW RATE (l/s)	FLOW RATE (l/s) FOR				
		HEIGHT + 2 mm	HEIGHT + 4 mm	HEIGHT + 5 mm	HEIGHT + 6 mm	HEIGHT + 8 mm
10	0,01			0,04		
20	0,08			0,15		
30	0,23			0,04		
40	0,47	0,53	0,60		0,67	0,74
50	0,80	0,88	0,97		1,06	1,16
60	1,26	1,36	1,47		1,59	1,71
70	1,84	1,97	2,11		2,25	2,40
80	2,55	2,71	2,88		3,05	3,23
90	3,41	3,60	3,80		4,00	4,21
100	4,42	4,64	4,87		5,10	5,34
110	5,59	5,85	6,11		6,38	6,65
120	6,94	7,22	7,,52		7,83	8,14
130	8,46	8,79	9,12		9,46	9,81
140	10,17	10,53	10,90		11,28	11,67
150	12,07	12,47	12,88		13,30	13,73
160	14,17	14,61	15,07		15,53	16,00
170	16,48	16,96	17,46		17,96	18,48
180	19,00	19,53	20,07		20,62	21,18
190	21,75	22,32	22,91		23,50	24,11
200	24,72	25,34	25,97		26,61	27,26
210	27,92	28,59	29,26		29,95	30,65
220	31,36	32,08	32,80		33,54	34,28
230	35,04	35,81	36,58		37,37	38,17
240	38,97	39,79	40,62		41,45	42,30

Another common but less preferred method in use is the —drum-and-stopwatch" technique. This requires only that all of the water blown from the borehole be channelled to a point where the concentrated flow can be collected in an open-ended drum of known volume (generally 20 litres) and the time taken to fill the container measured with a stopwatch for accuracy. Dividing the full volume of the drum (in litres) by the time taken (in seconds) to fill the drum gives the blow yield in litres per second *(//s).* It is cautioned, however, that this method is only effective and reliable for yields of less than approximately 2 l/s.

(e) Groundwater Rest Level

This parameter represents the depth, as measured from surface, to the level of standing water in the borehole. This measurement can be made with the use of any liquid level indicating device, the most common of which is an electrical contact meter (dipmeter). The groundwater level measurement must be accurate to the nearest 0,01 metre (one centimetre). The measurement reference point, which may either be the ground level or the collar of the borehole, should be identified against the measured depth value. The latter reference point will generally be represented by the top of the casing with which the borehole has been equipped. In these instances, it will also be necessary to measure the height by which the casing extends above ground level. If the borehole is drilled and completed on the same day, then a groundwater level measurement must be taken immediately before leaving the site.

If drilling and borehole construction extends over two or more days, then such measurements must also be taken before daily drilling activities commence, provided that water, including seepage water, has been encountered in the borehole. A groundwater level measurement must be referenced to the date on which it is made and, if more than one such measurement is made per day, then also the time of each such measurement must be recorded.

5-8 Down-the-hole Loss of Equipment

Drilling equipment, materials or tools may be lost down a borehole during drilling operations. Since this can often result in the irretrievable loss of a borehole, substantial efforts are generally employed by the Drilling Contractor to recover such material. This activity is also referred to as fishing. The Hydrogeological Consultant will afford the contractor every opportunity and reasonable time to fish for lost equipment. The Drilling Contractor must, in turn, keep the Hydrogeological Consultant informed of progress and the likelihood of success in this regard. The contractor will have no claim against any other party for any losses incurred in this regard. Further, the fate of a

borehole which can not be continued or completed due to the presence of lost equipment, materials or tools therein will finally be decided by the Hydrogeological Consultant. It may either be declared successful or lost.

(a) Borehole declared Successful

Circumstances under which a borehole may be declared successful include: (1) the borehole has encountered significant water or is drilled for resource monitoring purposes, (2) pumping equipment can be installed to an acceptable depth in the borehole and (3) the lost equipment does not pose a threat to the present and future quality of the groundwater. In the event that a borehole is declared successful despite the irrecoverable loss of drilling equipment, materials or tools therein, then the exact nature and position of the equipment lost in the borehole must be recorded and appear in relevant project documentation. The Drilling Contractor will be remunerated for a borehole declared successful under these circumstances on the same basis as for any other successfully completed borehole.

(b) Borehole declared Lost

Although the circumstances under which a borehole will be declared lost are varied and diverse, the criteria which should apply include: (1) the borehole has not yet encountered water irrespective of the depth reached, (2) the borehole has not yet encountered water even though the geological and hydrogeological indications are positive, (3) the borehole has encountered water but in too small a quantity to warrant the installation of pumping equipment, yet the geological and hydrogeological indications are positive that more water can be obtained, and (4) the borehole has encountered a significant quantity of water but the lost equipment prevents the installation of pumping equipment to an acceptable depth. In the event that a borehole is declared lost under these circumstances, then the criteria set out in subsection 5-6.1 for further actions, payment, etc, shall apply.

5-9 Down-the-hole Borehole Measurements

This activity is more commonly referred to as borehole logging. The measurements are carried out by manually or mechanically lowering tools or instruments of various technical sophistication down a borehole. Borehole logging is useful in instances where:

(1) surface geophysical data need to be calibrated against subsurface information,
(2) geological information for a borehole is absent or suspect,
(3) borehole construction information is absent or suspect, and

(4) information is required for the proper and effective stimulation by various means of borehole yields.

Although down-the-hole borehole measurements may be made at any time during the construction of a borehole, they are generally performed on completion thereof. In the event that such measurements need to be made before completion of the borehole, then the Drilling Contractor will be required to cease operations and facilitate access to the borehole for the duration of such activity. The contractor will be able to recover the cost of production loss (incurred for the duration that drilling activities are interrupted) against the rate specified for standing time in the Schedule of Rates, any claim in this regard to be verified and certified by the Hydrogeological Consultant.

The nature of the information to be gathered dictates the technique(s) to be used and the time required to complete these measurements. Basic information such as the depth of the borehole and the amount of steel casing installed therein is readily and cheaply determined by means of straightforward and uncomplicated instruments. Geophysical and geological information, on the other hand, requires the more costly application of specialized borehole logging instrumentation including the use of video cameras. It is required that the more sophisticated of these investigations: (1) be motivated to and authorised by the Implementing Authority prior to their execution and (2) be applied judiciously at the discretion of the Hydrogeological Consultant.

(a) Borehole Construction Information

This includes information such as: (1) the depth and diameter(s) of the borehole, (2) the depth and diameter(s) of casing installed in the borehole and (3) the integrity of the casing. This information can be used to verify/check the documented construction details of a borehole. The depth of a borehole can be determined simply by plumbing with a weighted line. A calliper tool can be used to determine borehole and casing diameters and the length and integrity of the casing string. The length of steel casing can also be determined more simply with a sensor operating on electromagnetic principles.

(b) Geological Information

This covers aspects such as identifying: (1) the nature of different rock formations occurring at various depths within a borehole on the basis of their geophysical (geo-electrical) properties and (2) the presence and size of fractures and/or fissures intersected by a borehole. This information can be used to: (1) calibrate surface geophysical data obtained from similar geological environments, (2) determine the optimum depth at which a borehole pump should be installed in a

borehole and (3) direct the application of borehole yield stimulation activities such as hydro fracturing.

(c) Hydrogeological Information

This includes information such as (1) the porosity of rock formations and (2) the rate of groundwater movement. These measurements generally require the use of more sophisticated and costly instrumentation.

(d) Hydrochemical Information

This covers aspects such as the variation of groundwater quality with depth in a borehole. These measurements again require the use of generally more sophisticated instrumentation. Not quite in the same vein as these measurements, yet of probably greater importance, is the representative water sample obtained from a borehole during its development (subsection 5-6.(o)).

The water sample must be submitted to a laboratory as soon as is reasonably possible for chemical analysis of: (1) the electrical conductivity, *(2)* the nitrate concentration and (3) the fluoride concentration. These results will provide an early indication of whether the groundwater quality is acceptable or not and, if not, whether test pumping is warranted.

5-10 Rehabilitation of Existing Boreholes

The scope of this work may vary from the basic cleaning out and redevelopment of an existing borehole to the recovery of casing, the reaming and subsequent reinstallation of casing. As far as it is possible, the nature of the rehabilitation required in each individual instance should be identified prior to undertaking this activity since this will indicate which equipment will most suitably complete the task. This is illustrated in the following examples. The straight-forward cleaning out and redevelopment of an existing borehole can readily be accomplished using a rotary air percussion drilling rig. On the other hand, the recovery of casing and the removal of unnatural material from a borehole are more readily accomplished using a cable tool (jumper) drilling rig.

It is particularly helpful to both the Hydrogeological Consultant and the Drilling Contractor undertaking the rehabilitation to know as much about the original construction (e.g. depth, diameter, length and type of casing, geology, etc) of the borehole as possible. This is impossible in instances where original

records are lost, deficient, vague or poorly documented/archived. It will be required in such cases to obtain as much information as can reasonably be gleaned from an *in situ* inspection of the borehole. This might include such basic measurements as plumbing the current depth of the borehole and establishing, by means of a casing detector, the length of casing (steel) installed, to carrying out various of the more sophisticated down-the-hole borehole measurements and observations (subsection 5-9).

The rehabilitation of an existing borehole should preferably be carried out under the supervision of the Hydrogeological Consultant. In any event, the execution of such work will be subject to the same degree of data collection and record keeping as is required of a new borehole.

The Drilling Contractor will be remunerated for this service on the basis of the rates bidded in the Schedule of Rates. It will be expected of the contractor to have assessed the potential technical risks involved with such work and, as a consequence, the contractor shall have no claim against any other party for the loss of equipment, materials or tools incurred in the course of such work.

5-11 Final Acceptance

The Hydrogeological Consultant shall accept a successfully finished community water supply or monitoring borehole by certifying the Drilling Contractor‘s invoice for such borehole as true and correct for payment by the Implementing Authority. At this stage, the Hydrogeological Consultant will have established that all aspects pertaining to the work and the final product meet, at least, those of the various criteria and requirements set out above which have been imposed.

SECTION 3

INFORMATION SUBMITTED BY BIDDER

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SECTION 3 - INFORMATION SUBMITTED BY BIDDER

INDEX

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

INFORMATION SUBMITTED BY BIDDER

1-0. PARTICULARS OF BIDDER

1-1. Name of Bidder ……..

1-2. Address of ……..

1-3. Authorised signatory ……..
Position held ……..

1-4. Does Bidder have an office in the Province: ☐ (Yes) ☐ (No)

City / town ……
Address ……
……
……

Contact person ……

Telephone ……

Fax ……

e-mail ……

2-0. ALTERATIONS BY BIDDER

Should the Bidder wish to make any departures from or modifications to any

part of this document or wish to qualify the Bid in any way, these shall be clearly set out hereunder or alternatively stated in a covering letter attached to this Bid.

2-1. Section: ……..Subsection: ……..Page: ……

Alteration: ……..
……..
……..

2-2. Section: ……..Subsection: ……..Page: ……

Alteration: ……..
……..
……..

2-3. Section: ……..Subsection: ……..Page: ……

Alteration: ……..
……..
……..

3-0. STATEMENT OF RECENT SIMILAR WORKS COMPLETED

3-1. Client organization ……
Reference organisation: ……
Telephone number: ……
Value of work: ……
Year completed: ……
Nature of work: ……

3-2. Client organization ……
Reference organisation: ……
Telephone number: ……
Value of work: ……
Year completed: ……
Nature of work: ……

3-3. Client organization ……
Reference organisation: ……
Telephone number: ……
Value of work: ……
Year completed: ……
Nature of work: ……

4-0. STATEMENT OF SUPERVISORY PERSONNEL TO BE DEPLOYED

4-1. Project representative

Name: ……
Current position held: ……
Length of current employment (years): ……
Previous relevant experience: ……...
Project name: ……
Value of work: ……..
Year completed: ……..
Position held on project: ……

4-2. Drilling foreman 1

Name: ……
Current position held: ……
Length of current employment (years): ……
Previous relevant experience: ……...
Project name: ……
Value of work: ……..
Year completed: ……..
Position held on project: ……

4-3. Drilling foreman 2

Name: ……
Current position held: ……
Length of current employment (years): ……
Previous relevant experience: ……...
Project name: ……
Value of work: ……..
Year completed: ……..
Position held on project: ……

5-0. STATEMENT OF PLANT AND EQUIPMENT TO BE DEPLOYED

5-1.Drilling unit 1 (If Specialized please indicate)

Make and model of drilling rig ……..
Applicable Drilling methods .....
Age (years) ……. Years with company: ……
Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated depth (m) ……..….. at maximum drilling diameter (mm) ……
Mast capacity (kg) ……

Draw-works capacity (kg) …….
Make and model of air compressor …….
Age (years) …….Years with company ……
Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated capacity (kPa) ……and volume (cfm) …….
Drill pipe diameter (mm) ……..length (m) ……..
Number …….

5-2.Drilling unit 2

Make and model of drilling rig……..
Applicable Drilling methods .....
Age (years) ……. Years with company: ……
Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated depth (m) ……..….. at maximum drilling diameter (mm) …….
Mast capacity (kg) ……
Draw-works capacity (kg) …….
Make and model of air compressor …….
Age (years) …….Years with company ……
Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated capacity (kPa) ……and volume (cfm) …….
Drill pipe diameter (mm) ……..length (m) ……..
Number …….

5-3.Drilling unit 3

Make and model of drilling rig ……..
Applicable Drilling methods .....
Age (years) ……. Years with company: ……
Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated depth (m) ……..….. at maximum drilling diameter (mm) …….
Mast capacity (kg) ……
Draw-works capacity (kg) …….
Make and model of air compressor …….
Age (years) …….Years with company ……

Condition ☐ (excellent) ☐ (good) ☐ (fair)
Mounting method ☐ (truck) ☐ (trailer)
Rated capacity (kPa) ……and volume (cfm) …….
Drill pipe diameter (mm) ……..length (m) ……..
Number …….

5-4. Ancillary plant and equipment

Supply / support vehicles ……
……
……
……
……
……

Stabiliser rods diameter (mm) …… number …….
diameter (mm) …… number …….
diameter (mm) …… number …….

Drill collars / overshots diameter (mm) …… number …….
diameter (mm ……. number …….
diameter (mm ……. number …….

Straightness test —dummies" diameter (mm) …….
diameter (mm) ……..
diameter (mm) ……..

Drilling hammer/bits ……
……
……
……
……

6. SCHEDULE OF PROPOSED SUB-CONTRACTORS

In accordance with the General Conditions of Contract and Special Conditions of Contract the Bidder shall state hereunder the names of sub-contractors he proposes to employ for the execution of certain sections of the Works.

ITEM (Please specify)	PROPOSED SUBCONTRACTOR	ADDRESS WHERE PLANT AND EQUIPMENT CAN BE INSPECTED

SECTION4

SCHEDULE OF RATES

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SECTION 4 - SCHEDULE OF RATES

INDEX

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SCHEDULE OF RATES

1.0. PREAMBLE

1-1. The Schedule of Rates (SoR) forms an integral part of this Bid and shall be read in conjunction with: (1) subsection 4-3 of Section 4 of Part 1 and (2) Part 2 of the Minimum Standards and Guidelines Document (DWS, April 1997).

1-2. The following words in the SoR have the meanings hereby assigned to them.

Unit : The metric unit of measurement for each item of work as defined in the guidelines.

Quantity : The number of units of work for each item.

Rate : The rate per unit bidded for an item.

Amount: The product of the quantity and the rate bidded for an item.

Sum : The amount bidded for an item of which the extent is described in the SoR, the Specifications or elsewhere in the Minimum Standards and Guidelines Document (DWS, April 1997).

1-3. The short description of the items in the SoR are for identification purposes only, the work covered by the items being fully described in subsection 4-3 of Section 4 (Part 1) of the Minimum Standards and Guidelines Document (DWAF, April 1997) and/or in Section 2 of this document.

1-4. Unless stated otherwise, items are measured net and Bidders must

allow for waste in their bidded rates.

1-5. All rates and sums of money quoted in the SoR shall be in Rands and whole Cents. Fractions of a cent shall be discounted.

1-6. No quantities are set out in the SoR. The quantities of work accepted and certified for payment shall be used for determining payments to Appointees.

1-7. Except where Provisional Sums have been indicated, Bidders shall enter an applicable rate in the Rate Column of the SoR for each scheduled item. Appointees will not be paid for items against which no rate has been entered on the presumption that they do not wish to receive payment for any such work.

Should Bidders group a number of items and bid one lump sum rate for such group of items, this single lump sum rate shall apply to that group of items and not to each individual item. Should Bidders indicate against any item that compensation for such item is included in another item, the rate for the item included in another shall be deemed nil.

Bids may be rejected if any rates in the SoR are, in the opinion of the Implementing Authority, deemed unreasonable or out of proportion.

1-8. Bidders are at liberty to insert a rate of their own choosing for each item in the SoR and in this regard their attention is drawn to the fact that Appointees have the right, under various circumstances, to payment for additional works carried out and that the Executive Agency is obliged to base its assessment of the rates to be paid for such additional work on the rates inserted in the SoR by the Appointee(s).

1-9. Payment based on the rates bidded in the SoR shall cover all the services and incidentals included in the works covered by the Appointment and shall be made in accordance with the Conditions of Bid (Section 2 of this document).

1-10. The Contract Price for the completed Contract shall be computed from the actual quantities of authorised work done as certified by the Executive Agency valued at rates bidded against the respective items in the SoR and shall include such authorised provisional sums and items of extra work as become payable in terms of the Contract.

1-11. Where Appointees are required to furnish detailed drawings and designs or other information in terms of the Contract Documents, all costs thereof shall be deemed to have been provided for and included in the unit rates and amounts bidded for the items in the SoR and separate additional payments will not be made.

1-12. Bidders must price each item in the SoR in BLACK INK.

1-13. The individual rates bidded for all work to be done or material to be supplied shall not be adjusted if the actual contract price for the completed Contract is different from the approximate expected value of the works, but shall remain fixed for the period of the Contract.

1-14. The abbreviations used in the SoR are defined as follows:

mm	=	millimetre	m	=	metre
km	=	kilometre	m^2	=	square metre
ha	=	hectare	m^3	=	cubic metre
ha	=	hectare m^3			
m^3/km	=	cubic metre per km			
l	=	litre			
kl	=	kilolitre			
kg	=	kilogram			
t	=	ton (1000 kg)			
No	=	number			
%	=	percent			
kW	=	kilowatt			
PC sum	=	prime cost sum			
P sum	=	provisional sum			
kPa	=	kiloPascal			
R/only	=	Rate only			
W/day	=	Work day			

2-0 SCHEDULE OF RATES (ANNEXTURE 2) BID W

2-1 STANDARD Drilling of boreholes for SOUTH AFRICA					
Item No.		**Unit**	**Quantity**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities to Site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
2-0	**DRILLING (Unconsolidated and consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**				
2-1	**Rotary air percussion** with foam – 0 to 150 m				
2-1-1	165 mm diameter	m	25 000		
2-1-2	203 mm diameter	m	2 500		
2-1-3	254 or 216 mm diameter	m	4 000		
2-1-4	305 mm diameter	m	1 000		
				Sub-total carried over	

2-1 STANDARD Drilling of boreholes for SOUTH AFRICA					
Item No.		**Unit**	**Quantity**	**Rate**	**Amount R / c**
				Sub-total brought forward	
2-2	**Rotary air percussion** with foam – 151 to 300 m (rate to be over and above items 2-1-1 to 2-1-4)				
2-2-1	165 mm diameter	m	6000		
2-2-2	203 or 216 mm diameter	m	1000		
2-2-3	254 mm diameter	m	2000		
2-2-4	305 mm diameter	m	1000		
3-0	**DRILLING (Highly abrasive rocks e.g. quartzite)**				
3-1	**Rotary air percussion** with foam – 0 to 150 m				
3-1-1	165 mm diameter	m	6000		
3-1-2	203 or 216 mm diameter	m	1000		
3-1-3	254 mm diameter	m	2000		
3-1-4	305 mm diameter	m	1000		
3-2	**Rotary air percussion** with foam – 151 to 300 m (rate to be over and above items 3-1-1 to 3-1-4)				
3-2-1	165 mm diameter	m	3000		
3-2-2	203 or 216 mm diameter	m	500		
3-2-3	254 mm diameter	m	500		
3-2-4	305 mm diameter	m	500		
4-0	**DRILLING (Leached / cavernous carbonate rocks)**				
4-1	**Rotary air percussion** with foam 1m to Max 150m				
4-1-1	165 mm diameter	m	6000		
4-1-2	203 or 216 mm diameter	m	1000		
4-1-3	254 mm diameter	m	2000		
4-1-4	305 mm diameter	m	1000		
5-0	**Mark-up on materials – not included in bid (Instructions to be received from Client/Consultant)**				
5-1	Mark-up on materials less than R100 000	%	100 000	15	**R15 000.00**
5-2	Mark-up on materials above R100 000	%	100 000	15	**R15 000.00**
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000	10	**R40 000.00**
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
6-0	**CASING (supplied, delivered and installed)**				
6-1	Steel (bevel-edged plain)				
6-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
6-1-2	215 mm ID (minimum wall thickness 4.5 mm)	m	1500		
				Sub-total carried over	

2-1 STANDARD Drilling of boreholes for SOUTH AFRICA					
Item No.		**Unit**	**Quantity**	**Rate**	**Amount R / c**
				Sub-total brought forward	
6-1-3	254 mm ID (minimum wall thickness 4.5 mm)	m	2500		
6-2	Steel (slotted, width 3-4 mm)				
6-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
6-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
6-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
6-3	UPVC (flush internal/external thread-jointed, plain)				
6-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
6-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
6-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
6-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
6-4	UPVC (flush internal/external thread-jointed, perforated)				
6-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
6-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
6-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
6-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
6-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
6-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
7-0	**CASING SHOES** – For drill & drive – on instruction from client/consultant only				
7-1	To fit 165 mm ID steel casing	m	40		
7-2	To fit 215 mm ID steel casing	m	40		
7-3	To fit 254 mm ID steel casing	m	40		
8-0	**REAMING OF BOREHOLES**				
8-1	152 mm / 165 mm to 203 mm or 219 mm diameter	m	5000		
8-2	203 mm or 219 mm to 254 mm diameter	m	1000		
8-3	152 mm or 165 mm to 254 mm diameter	m	5000		
9-0	**RECOVERY OF STEEL CASING**	**m**	**2000**		
10-0	**FORMATION STABILISER** (supplied, delivered and installed)				
10-1	Silica sand	Per/kg	50 000		
10-2	Liquid	Per/Lt	10 000		
11-0	**CONCRETE COLLAR** (complete per borehole)	**No**	**400**		
12-0	**GROUTING**				
12-1	0 to 2 m^3	m^3	500		
12-2	2 to 10 m^3	m^3	500		
12-3	Greater than 10m^3	m^3	500		
				Sub-total carried over	

2-1 STANDARD Drilling of boreholes for SOUTH AFRICA					
Item No.		**Unit**	**Quantity**	**Rate**	**Amount R / c**
13-0	**SANITARY SEAL** (complete per borehole) per m – maximum five metres				
13-1	Type I (254 mm hole & 165 mm ID casing)	m	200		
13-2	Type II (305 mm hole & 215/254 mm ID casing)	m	100		
14-0	**ARTESIAN BOREHOLE SEAL OR CAPING** (complete per borehole)				
14-1	0 to 2 L/s	No	100		
15-0	**BOREHOLE DISINFECTION** (complete per borehole)	**No**	**300**		
16-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
16-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
17-0	**BOREHOLE MARKING** (complete per borehole) (refer to Drawing No. 9)	No	400		
18-0	**DATA RECORDING AND REPORTING** (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
19-0	**Development of Borehole (also for blow yield)**	Hr	600		
20-0	**STANDING TIME RATE**	Hr	500		
21-0	**BOREHOLE REHABILITATION**				
21-1	With rotary air percussion drilling rig with foam	Hr	200		
22-0	**Casual (Day) labour sourced locally**	Day	150		
2-1 STANDARD TOTAL CARRIED FORWARD TO SUMMARY (VAT included)					

2-2-1 Specialized drilling of ODEX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site	Sum	100		
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
2-0	**DRILLING** (Unconsolidated and consolidated sediments, igneous, metamorphic and fractured carbonate rocks)				
2-1	**Odex** (including supply, delivery & installation of at least 6 mm sidewall Odex casing) – loose/Fractured formation – boulders and sand				
2-1-1	194 mm OD (including casing)	m	2000		
2-1-2	219 mm OD (including casing)	m	2000		
2-1-3	273 mm OD (including casing)	m	2000		
				Sub-total carried over	

2-2-1 Specialized drilling of ODEX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
3-0	**DRILLING** (Leached / cavernous carbonate rocks)				
3-1	**Odex** (including supply, delivery & installation of at least 6 mm sidewall Odex casing)				
3-1-1	194 mm OD (including casing)	m	2000		
3-1-2	219 mm OD (including casing)	m	2000		
3-1-3	273 mm OD (including casing)	m	2000		
4-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
4-1	Mark-up on materials less than R100 000	%	100 000		
4-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
5-0	**CASING** (supplied, delivered and installed)				
5-1	Steel (bevel-edged plain)				
5-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
5-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
5-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
5-2	Steel (slotted, width 3-4 mm)				
5-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
5-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
5-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
5-3	UPVC (flush internal/external thread-jointed, plain)				
5-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
5-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
5-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
5-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
5-4	UPVC (flush internal/external thread-jointed, perforated)				
5-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
5-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
5-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
5-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
5-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
5-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
6-0	**CASING SHOES**				
6-1	To fit 165 mm ID steel casing	m	40		
				Sub-total carried over	

2-2-1 Specialized drilling of ODEX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
			Sub-total brought forward		
6-2	To fit 215 mm ID steel casing	m	40		
6-3	To fit 254 mm ID steel casing	m	40		
7-0	**REAMING OF BOREHOLES**				
7-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000		
7-2	203 mm or 219 mm to 254 mm diameter	m	1000		
7-3	152 mm or 165 mm to 254 mm diameter	m	5000		
8-0	**RECOVERY OF STEEL CASING**	m	2000		
9-0	**FORMATION STABILISER** (supplied, delivered and installed)				
9-1	Silica sand	Per/kg	50 000		
9-2	Liquid	Per/Lt	10 000		
10-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
11-0	**GROUTING**				
11-1	0 to 2 m^3	m^3	500		
11-2	2 to 10 m^3	m^3	500		
11-3	Greater than 10m^3	m^3	500		
12-0	**SANITARY SEAL** (complete per borehole)				
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200		
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200		
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200		
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300		
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
15-0	**BOREHOLE MARKING** (complete per borehole) (refer to Drawing No. 9)	No	400		
16-0	**DATA RECORDING & REPORTING** (complete per bh)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
17-0	**Development of Borehole (also for blow yield)**	Hr	600		
18-0	**STANDING TIME RATE**	Hr	500		
19-0	**BOREHOLE REHABILITATION**				
19-1	With rotary air percussion drilling rig with foam	Hr	200		
20-0	**Casual (Day) labour sourced locally**	Day	150		
	2-2-1 ODEX TOTAL CARRIED FORWARD TO SUMMARY (VAT included)				

2-2-2 Specialized drilling of MUD ROTARY boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site	Sum	100		
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
1-6	Excavation of mud pit	Sum	100		
2-0	**DRILLING** (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)				
2-1	**Mud rotary** (including supply, delivery & installation) – loose/Fractured formation – boulders and sand				
2-1-1	194 mm OD (including casing)	m	2000		
2-1-2	219 mm OD (including casing)	m	2000		
2-1-3	273 mm OD (including casing)	m	2000		
				Sub-total carried over	

2-2-2 Specialized drilling of MUD ROTARY boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
3-1	Mark-up on materials less than R100 000	%	100 000		
3-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
4-0	**CASING** (supplied, delivered and installed)				
4-1	Steel (bevel-edged plain)				
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2	Steel (slotted, width 3-4 mm)				
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
4-3	UPVC (flush internal/external thread-jointed, plain)				
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
4-4	UPVC (flush internal/external thread-jointed, perforated)				
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
5-0	**CASING SHOES**				
5-1	To fit 165 mm ID steel casing	m	40		
5-2	To fit 215 mm ID steel casing	m	40		
5-3	To fit 254 mm ID steel casing	m	40		
6-0	**REAMING OF BOREHOLES**				
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000		
6-2	203 mm or 219 mm to 254 mm diameter	m	1000		
6-3	152 mm or 165 mm to 254 mm diameter	m	5000		
				Sub-total carried over	

2-2-2 Specialized drilling of MUD ROTARY boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
			Sub-total brought forward		
7-0	**RECOVERY OF STEEL CASING**	**m**	**2000**		
8-0	**FORMATION STABILISER** (supplied, delivered and installed)				
8-1	Silica sand	Per/kg	50 000		
8-2	Liquid	Per/Lt	10 000		
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
10-0	**GROUTING**				
10-1	0 to 2 m^3	m^3	500		
10-2	2 to 10 m^3	m^3	500		
10-3	Greater than 10m^3	m^3	500		
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
12-0	**SANITARY SEAL** (complete per borehole)				
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200		
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200		
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200		
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300		
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400		
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
17-0	**Development of Borehole (also for blow yield)**	Hr	600		
18-0	**STANDING TIME RATE**	Hr	500		
19-0	**BOREHOLE REHABILITATION**				
19-1	With rotary air percussion drilling rig with foam	Hr	200		
20-0	**Casual (Day) labour sourced locally**	Day	150		
	2-2-2 MUD ROTARY TOTAL CARRIED FORWARD TO SUMMARY (VAT included)				

2-2-3 Specialized drilling of SYMMETRIX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
2-0	**DRILLING (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**				
2-1	**Symmetrix** (including supply, delivery & installation) – loose formation – sand and clay				
2-3-1	165 mm OD (including casing)	m	2000		
2-3-2	219 mm OD (including casing)	m	2000		
2-3-3	300 mm OD (including casing)	m	2000		
				Sub-total carried over	

2-2-3 Specialized drilling of SYMMETRIX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
3-1	Mark-up on materials less than R100 000	%	100 000		
3-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
4-0	**CASING** (supplied, delivered and installed)				
4-1	Steel (bevel-edged plain)				
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2	Steel (slotted, width 3-4 mm)				
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
4-3	UPVC (flush internal/external thread-jointed, plain)				
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
4-4	UPVC (flush internal/external thread-jointed, perforated)				
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
5-0	**CASING SHOES**				
5-1	To fit 165 mm ID steel casing	m	40		
5-2	To fit 215 mm ID steel casing	m	40		
5-3	To fit 254 mm ID steel casing	m	40		
6-0	**REAMING OF BOREHOLES**				
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000		
6-2	203 mm or 219 mm to 254 mm diameter	m	1000		
6-3	152 mm or 165 mm to 254 mm diameter	m	5000		
				Sub-total carried over	

2-2-3 Specialized drilling of SYMMETRIX boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
7-0	**RECOVERY OF STEEL CASING**	m	2000		
8-0	**FORMATION STABILISER** (supplied, delivered and installed)				
8-1	Silica sand	Per/kg	50 000		
8-2	Liquid	Per/Lt	10 000		
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
10-0	**GROUTING**				
10-1	0 to 2 m^3	m^3	500		
10-2	2 to 10 m^3	m^3	500		
10-3	Greater than 10m^3	m^3	500		
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
12-0	**SANITARY SEAL** (complete per borehole)				
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200		
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200		
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200		
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300		
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400		
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
17-0	**Development of Borehole (also for blow yield)**	Hr	600		
18-0	**STANDING TIME RATE**	Hr	500		
19-0	**BOREHOLE REHABILITATION**				
19-1	With rotary air percussion drilling rig with foam	Hr	200		
20-0	**Casual (Day) labour sourced locally**	Day	150		
	2-2-3 SYMMETRIX TOTAL CARRIED FORWARD TO SUMMARY (VAT included)				

2-2-4 Specialized drilling of AUGER boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
2-0	**DRILLING (Unconsolidated and highly fractured consolidated sediments, igneous, metamorphic and fractured carbonate rocks)**				
2-1	**Auger** (including supply, delivery & installation) – loose/Fractured formation – clay and sand				
2-1-1	165 mm diameter	m	2000		
2-1-2	203 or 216 mm diameter	m	2000		
2-1-3	254 mm diameter	m	2000		
2-1-4	305 mm diameter	m	2000		
				Sub-total carried over	

2-2-4 Specialized drilling of AUGER boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
3-1	Mark-up on materials less than R100 000	%	100 000		
3-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
4-0	**CASING** (supplied, delivered and installed)				
4-1	Steel (bevel-edged plain)				
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2	Steel (slotted, width 3-4 mm)				
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
4-3	UPVC (flush internal/external thread-jointed, plain)				
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
4-4	UPVC (flush internal/external thread-jointed, perforated)				
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
5-0	**CASING SHOES**				
5-1	To fit 165 mm ID steel casing	m	40		
5-2	To fit 215 mm ID steel casing	m	40		
5-3	To fit 254 mm ID steel casing	m	40		
6-0	**REAMING OF BOREHOLES**				
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000		
6-2	203 mm or 219 mm to 254 mm diameter	m	1000		
6-3	152 mm or 165 mm to 254 mm diameter	m	5000		
				Sub-total carried over	

2-2-4 Specialized drilling of AUGER boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
7-0	**RECOVERY OF STEEL CASING**	m	2000		
8-0	**FORMATION STABILISER** (supplied, delivered and installed)				
8-1	Silica sand	Per/kg	50 000		
8-2	Liquid	Per/Lt	10 000		
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
10-0	**GROUTING**				
10-1	0 to 2 m^3	m^3	500		
10-2	2 to 10 m^3	m^3	500		
10-3	Greater than 10m^3	m^3	500		
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
12-0	**SANITARY SEAL** (complete per borehole)				
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200		
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200		
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200		
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300		
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400		
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
17-0	**Development of Borehole (also for blow yield)**	Hr	600		
18-0	**STANDING TIME RATE**	Hr	500		
19-0	**BOREHOLE REHABILITATION**				
19-1	With rotary air percussion drilling rig with foam	Hr	200		
20-0	**Casual (Day) labour sourced locally**	Day	150		
				2-2-4 AUGER TOTAL CARRIED FORWARD TO SUMMARY (VAT included)	

2-3 HIGH FLOWING ARTESIAN boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
2-0	**SEALING AND CAPPING**				
2-2	2 to 10 L/s	No	100		
2-3	Greater than 10 L/s	No	100		
3-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
3-1	Mark-up on materials less than R100 000	%	100 000		
3-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
				Sub-total carried over	

2-3 HIGH FLOWING ARTESIAN boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
4-0	**CASING** (supplied, delivered and installed)				
4-1	Steel (bevel-edged plain)				
4-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
4-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
4-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2	Steel (slotted, width 3-4 mm)				
4-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
4-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
4-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
4-3	UPVC (flush internal/external thread-jointed, plain)				
4-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
4-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
4-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
4-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
4-4	UPVC (flush internal/external thread-jointed, perforated)				
4-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
4-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
4-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
4-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
4-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
5-0	**CASING SHOES**				
5-1	To fit 165 mm ID steel casing	m	40		
5-2	To fit 215 mm ID steel casing	m	40		
5-3	To fit 254 mm ID steel casing	m	40		
6-0	**REAMING OF BOREHOLES**				
6-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	5000		
6-2	203 mm or 219 mm to 254 mm diameter	m	1000		
6-3	152 mm or 165 mm to 254 mm diameter	m	5000		
7-0	**RECOVERY OF STEEL CASING**	m	2000		
8-0	**FORMATION STABILISER** (supplied, delivered and installed)				
8-1	Silica sand	Per/kg	50 000		
8-2	Liquid	Per/Lt	10 000		
9-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
				Sub-total carried over	

2-3 HIGH FLOWING ARTESIAN boreholes for SOUTH AFRICA					
Item No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount R / c**
				Sub-total brought forward	
10-0	**GROUTING**				
10-1	0 to 2 m^3	m^3	500		
10-2	2 to 10 m^3	m^3	500		
10-3	Greater than 10m^3	m^3	500		
11-0	**CONCRETE COLLAR** (complete per borehole)	No	400		
12-0	**SANITARY SEAL** (complete per borehole)				
12-1	Type I (254 mm hole & 194 mm OD casing)	m	200		
12-2	Type II (305 mm hole & 219 mm OD casing)	m	200		
12.3	Type III (305 mm hole & 273 mm OD casing)	m	200		
13-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	300		
14-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
14-1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
15-0	BOREHOLE MARKING (complete per borehole) (refer to Drawing No. 9)	No	400		
16-0	DATA RECORDING AND REPORTING (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
17-0	**Development of Borehole (also for blow yield)**	Hr	600		
18-0	**STANDING TIME RATE**	Hr	500		
19-0	**BOREHOLE REHABILITATION**				
19-1	With rotary air percussion drilling rig with foam	Hr	200		
20-0	**Casual (Day) labour sourced locally**	Day	150		
	2-3 ARTESIAN (>2 L/s) TOTAL CARRIED FORWARD TO SUMMARY (VAT included)				

2-4 Rehabilitation of boreholes for SOUTH AFRICA

Item No.	Description	Unit	Qty	Rate	Amount R / c
1-0	**Establishment of Own Facilities on Site** – All listed items to be available on each site – according the Occupational Health and Safety specification for Contractual work) – Document will be signed by successful bidder. - GPS, - Accommodation (Tents, caravans etc.) - Dedicated wash area (shower, basin etc.) - Dedicated area for food preparation, - Demarcated area for fuel, oil etc. - Medical kit, - Demarcation barrier (Not danger tape) - Protection clothing (Hard hat, safety shoe, etc.) - Overalls with contractors name and/or logo Contractors will be monitored by Consultants. This will include instructions to improve etc. reporting to the client and actions taken.				
1-1	Establishment of Own Facilities on Site				
1-1-1	0 to 500 km	Sum	100		
1-1-2	500 to 1000 km	Sum	100		
1-1-3	Greater than 1000 km	Sum	100		
1-2	Mobilisation and set-up of plant to/at first borehole	Sum	100		
1-3	Set-up of plant per boreholes (after first) up to 10km	No	300		
1-4	Interhole moves				
1-4-1	For distances exceeding 10 km	Km	20 000		
1-5	De-establishment from site	Sum	100		
1-5-1	0 to 500 km	Sum	100		
1-5-2	500 to 1000 km	Sum	100		
1-5-3	Greater than 1000 km	Sum	100		
2-0	**CASING (supplied, delivered and installed)**				
2-1	Steel (bevel-edged plain)				
2-1-1	165 mm ID (minimum wall thickness 4 mm)	m	6000		
2-1-2	215 mm ID (minimum wall thickness 4 mm)	m	1500		
2-1-3	254 mm ID (minimum wall thickness 4 mm)	m	2500		
2-2	Steel (slotted, width 3-4 mm)				
2-2-1	165 mm ID (minimum wall thickness 4 mm)	m	2500		
2-2-2	215 mm ID (minimum wall thickness 4.5 mm)	m	500		
				Sub-total carried over	

2-4 Rehabilitation of boreholes for SOUTH AFRICA

Item No.	Description	Unit	Qty	Rate	Amount R / c
				Sub-total brought forward	
2-2-3	254 mm ID (minimum wall thickness 4.5 mm)	m	1000		
2-3	UPVC (flush internal/external thread-jointed, plain)				
2-3-1	165 mm ID (minimum wall thickness 7 mm)	m	1000		
2-3-2	181 mm ID (minimum wall thickness 8.5 mm)	m	1000		
2-3-3	203 mm ID (minimum wall thickness 9.1 mm)	m	1000		
2-3-4	227 mm ID (minimum wall thickness 11 mm)	m	1000		
2-4	UPVC (flush internal/external thread-jointed, perforated)				
2-4-1	127 mm ID (minimum wall thickness 6 mm)	m	400		
2-4-2	150 mm ID (minimum wall thickness 6 mm)	m	400		
2-4-3	165 mm ID (minimum wall thickness 7 mm)	m	400		
2-4-4	181 mm ID (minimum wall thickness 8.5 mm)	m	400		
2-4-5	203 mm ID (minimum wall thickness 9.1 mm)	m	400		
2-4-6	227 mm ID (minimum wall thickness 11 mm)	m	400		
3-0	**REAMING OF BOREHOLES**				
3-1	152 mm or 165 mm to 203 mm or 219 mm diameter	m	2000		
4-0	**RECOVERY OF STEEL CASING**	m	1000		
5-0	**FORMATION STABILISER** (supplied, delivered and installed) – See specifications.				
5-1	Silica sand	Per/kg	50 000		
5-2	Liquid	Per/Lt	10 000		
6-0	**CONCRETE COLLAR** (complete per borehole)	No	50		
7-0	**SANITARY SEAL** (complete per borehole) per m – maximum five metres				
7-1	Type I (254 mm hole & 165 mm ID casing)	m	50		
7-2	Type II (305 mm hole & 215/254 mm ID casing)	m	50		
8-0	**BOREHOLE DISINFECTION** (complete per borehole)	No	500		
9-0	**BOREHOLE PROTECTION** (complete per borehole) (including casing lid – refer to Drawing No. 10) –Obtained from the DWS. Collect & Fit				
9.1	Borehole Φ 165 casing lid (obtainable from DWS refer to Drawing No. 10) (Borehole Protection)	No	300		
10-0	**STANDING TIME RATE**	Hr	500		
11-0	**BOREHOLE REHABILITATION** (Cable tool percussion)				
11-1	With cable tool (jumper) drilling rig	Hr	5000		
12-0	**BOREHOLE MARKING** (refer to Drawing No. 9)	No	500		
				Sub-total carried over	

2-4 Rehabilitation of boreholes for SOUTH AFRICA

Item No.	Description	Unit	Qty	Rate	Amount R / c
				Sub-total brought forward	
13-0	**EQUIPMENT REMOVAL AND RE-INSTALLATION**				
13-1	Hand pump, Windmills, Motorized, installations 25 to 65mm pipes				
13-1-1	Removal for 1st 100m depth	No	200		
13-1-2	Removal from depths extra-over 100m	m	1000		
13-1-3	Re-installation to 100m depth	No	200		
13-1-4	Re-installation to depths extra-over 100m	m	1000		
13-2	Motorized installations above 65mm pipes				
13-2-1	Removal for 1st 100m depth	No	200		
13-2-2	Removal from depths extra-over 100m	m	1000		
13-2-3	Re-installation to 100m depth	No	200		
13-2-4	Re-installation to depths extra-over 100m	m	1000		
13-3	Bore head superstructure				
13-3-1	Dismantling of superstructure	No	50		
13-3-2	Re-assembly of superstructure	No	50		
13-3-3	Remove windmill from borehole	No	50		
13-3-4	Fit / install windmill back onto borehole	No	50		
14-0	**Mark-up on materials** – not included in bid (Instructions to be received from Client/Consultant)				
	Materials	Sum	500 000		
14-1	Mark-up on materials less than R100 000	%	100 000		
14-2	Mark-up on materials above R100 000	%	100 000		
	First R100 000 @ 15% & next R400 000 @ 10%	%	400 000		
	R500 000 utilized for item 5-2				
	Percentage mark-up on items approved by the client or his representative with attached invoices for material used				
14-3	Labour	Hr	300		
14-4	Travelling costs for repairs @ AA rates				
15-0	**DATA RECORDING AND REPORTING** (complete per borehole)	No	400		
	It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the NGA The invoices of the contractors will not be certified for payment if it does not comply with the above requirements.				
	2-4 REHABILITATION TOTAL CARRIED FORWARD TO SUMMARY (VAT included)				

BID NO: W
SUMMARY OF BIDDED PRICES IN SOUTH AFRICA SERVICE CENTRE (SCHEDULE 8.1)

SERVICE CENTRE	AMOUNT BIDDED
2-1. Standard Drilling: South Africa	R
2-2. Specialized Drilling: South Africa	
2-2-1 Odex	R
2-2-2 Mud Rotary	R
2-2-3 Symmetrix	R
2-2-4 Auger	R
2-3. High Flowing Artesian boreholes: South Africa	R
2-4. Rehabilitation: South Africa	R
TOTAL AMOUNT BIDDED (VAT incl) carried forward to form of Bid Section 5	**R**

…… ……
BIDDER NAME **SIGNATURE**

_____ _____
TELEPHONE NO. **DATE:**

_____
FAX NO.

_____
CELLPHONE NO.

SBD 7.1

SBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SUCCESSFUL BIDDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SUCCESSFUL BIDDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution)……..……. in accordance with the requirements and specifications stipulated in bid number……..…….. at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

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

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and

   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfillment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) …….

CAPACITY …….

SIGNATURE …….

NAME OF FIRM …….

DATE ……..

WITNESSES

1 ……..……

2. ……

DATE: …….

SBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I……. in my capacity as ……..….. accept your bid under reference number ……dated……for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

SCHEDULE NO	PRICE (ALL APPLICABLE TAXES INCLUDED		DELIVERY PERIOD	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)
2-1					
2-2-1					
2-2-2					
2-2-3					
2-2-4					
2-3					
2-4					

4

4. I confirm that I am duly authorised to sign this contract.

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1. …….

2. …….

DATE …….

BID W

4.Priority of Provinces interested for Standard Drilling

Provinces.	**Priority (1-9)**
Limpopo Province	
Mpumalanga Province	
Gauteng Province	
North West Province	
Free State Province	
Northern Cape Province	
Western Cape Province	
Eastern Cape Province	
KwaZulu Natal Province	

_____ _____
BIDDER NAME SIGNATURE

_____ _____
COMPANY NAME DATE:

…… ……. …….
Telephone Number **Fax Number** **Cell phone Number**

SECTION 5

ADDITIONAL BID / CONTRACT DOCUMENTATION

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

SECTION 5 – ADDITIONAL BID / CONTRACT DOCUMENTATION

INDEX

9. CERTIFICATE OF BIDDER'S ATTENDANCE OF BRIEFING SESSION

BID / CONTRACT No **W**

This is to certify that I ……...

Representative of (Bidder) …….

Of address ……..
……..
……..

telephone no. ……

attended the briefing session on (date) …….

Held by of (Employer's representative) ……

Having previously studies the Bid Document, I Certify that I am satisfied with the description of the Work and the explanation given by the said Employer's representative and that I understand perfectly the work to be done, as specified and implied, in the execution of this Contract.

BIDDER'S REPRESENTATIVE ……..

EMPLOYER'S REPRESENTATIVE ……..

10. FORM OF BID

(Note: The Appendix forms part of the Bid)

BID / CONTRACT NO: **W**

AREA ……

SHORT DESCRIPTION OF WORKS: ……

……

……

TO THE IMPLEMENTING AUTHORITY: ……

Gentlemen,

Having examined the General and the Special Conditions of Contract and the Project Specifications and Schedule of Rates for the construction of the abovenamed Works, I/we offer to construct, complete and maintain the whole of the said Works in conformity with the General and Special Conditions of Contract, the Project Specifications and the Schedule of Rates, save as amended by the —Alterations by Bidder" (if any) attached hereto, for the rates as set out in the Schedule of Rates or for such other sum as may be ascertained in accordance with the Contract.

In the event of there being any errors of extension or addition in the priced Schedule of Rates, I/We agree to their being corrected by you or your appointed representative, the rates being taken as correct.

I/We undertake to complete and deliver the various parts and the whole of the Works comprised in the Contract within the time(s) stated in the Appendix to Bid attached hereto.

If my/our bid is accepted, I/we will, when required and within the time stipulated, provide a guarantee of a Bank or Insurance Company (to be approved by you) to be jointly and severally bound with me/us in a sum not exceeding ten percent (10%) of the estimated contract value, for the due performance of the Contract under the terms of a Bond in the form annexed hereto. The surety I/we propose is

……

of ……

I/we have studied the Conditions of Bid issued herewith and agree to be bound by same for the period of validity set out in the Appendix to Bid attached hereto.

Unless and until a formal Agreement is prepared and executed this Bid, together with the written acceptance thereof by yourselves or the Consultant acting on your behalf, shall constitute a binding Contract between us.

I/we understand that you are not bound to accept the lowest or any bid you may receive.

Yours faithfully
Name (please print) ……

On behalf of ……

Address ……

……

Date ……

Tel. & Fax No. ……

Signature ……

11. APPENDIX

Note: Clause numbers (CL NO) refer to the General Conditions of Contract 1990, issued by the South African Institution of Civil Engineering.

	CL NO	
Validity Period of Bid		HUNDRED AND TWENTY (120) days from Closing of Bids
Contract Period	1.(1)(ac)	36 months from date of appointment
Employer's address		See Form of Bid
Engineer's contact details	1.(2)	Dept of Water and Sanitation Director Water Resource Planning Systems Private Bag X313 PRETORIA, 0001 Tel: (012) 336-7500 Fax: (012) 324-6592
Contractor's address & phone number		See Form of Bid
Time within which Agreement must be signed		Within FOURTEEN (14) days of receipt of written notice from the Employer or Engineer to do so
Time when Contract comes into force and effect	12.(1)	On the Commencement Date
Time within which Works Segments must be commenced	12.(2)	Within 14 days of Engineer's instruction
Time within which works programme must be submitted	15	Within SEVEN (7) days of date of receipt of Engineer's instruction in terms of Sub-Clause 12.(2)
Insurance to be arranged by		Contractor
Minimum amount of Liability Insurance		ONE MILLION RANDS (R1,000,000.00) for any single claim – the number of claims to be unlimited during Construction and Defects Liability Periods
Time for Completion of Works Segments	45.(1)	As specified by the Engineer in his instruction in terms of Sub-Clause 12.(2)
Amount of penalty for delay	46.(1)	ONE THOUSAND RANDS (R1,000.00) per calendar day or part thereof
Amount of penalty for late commencement of Works Segments	45.(3)	ONE THOUSAND RANDS (R1,000.00) per calendar day or part thereof

12. MEMORANDUM OF AGREEMENT

Bid / Contract no: **W**

For drilling services to be rendered in regard to Disaster Management, Community Water Supply, Resource Assessment, and Resource Management for the Implementing Authority

……..

hereafter referred to as the —Client".

This Agreement signifies acceptance of the Bid submitted by

……..

hereafter referred to as the —Contractor" and witnesses as follows:

1. Words and expressions used in this Agreement shall have the same meanings as are respectively assigned to them in the Conditions of Contract.

2. The documents listed in the Conditions of Bid / Contract which forms section 2 of the bid documents shall be deemed to form and be read and construed as part of this Agreement.

3. In consideration of the payments to be made by the Employer to the Contractor as hereafter mentioned, the Contractor covenants with the Employer to construct, complete and maintain the Works in conformity in all respects with the provisions of the Contract.

4. The Employer hereby covenants to pay to the Contractor, in consideration of the construction, completion and maintenance of the Works, the Contract Price at the times and in the manner prescribed by the Contract.

   In witness whereof this Agreement is signed on behalf of the Employer at …… on this the …… day of ……. 20 ……
   By ……. (for and on behalf of the Employer)

In the presence of the subscribing witnesses

1. ……..

2. ……..

and is signed on behalf of the Contractor …….

……. on this the …… day of ……. 20 ……
By ……. (for and on behalf of the Contractor)

In the presence of the subscribing witnesses

1. ……..

2. ……..

SECTION 6

SPECIFICATION DRAWINGS, DATA RECORDINGS AND REPORTING

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

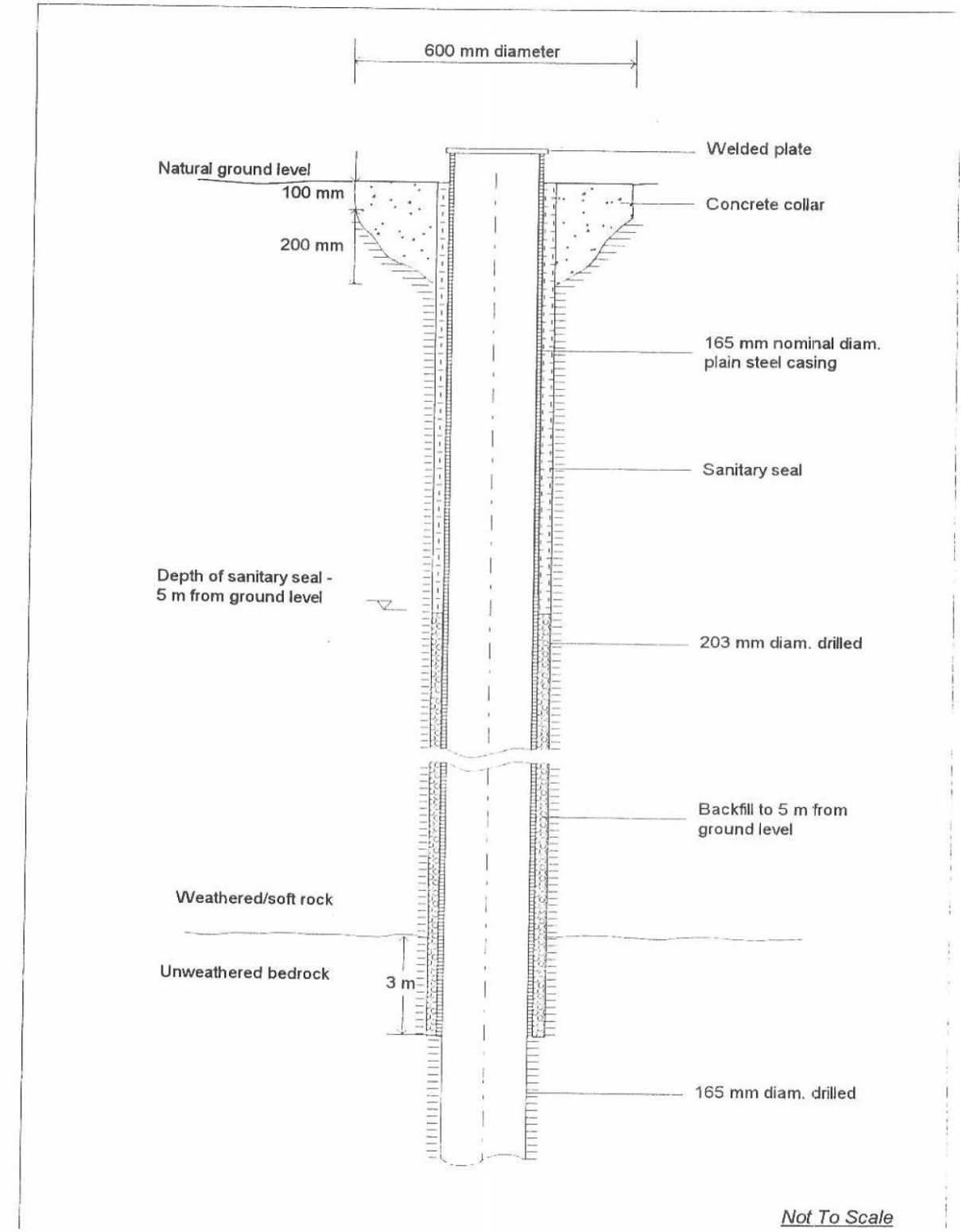
BID NO.: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

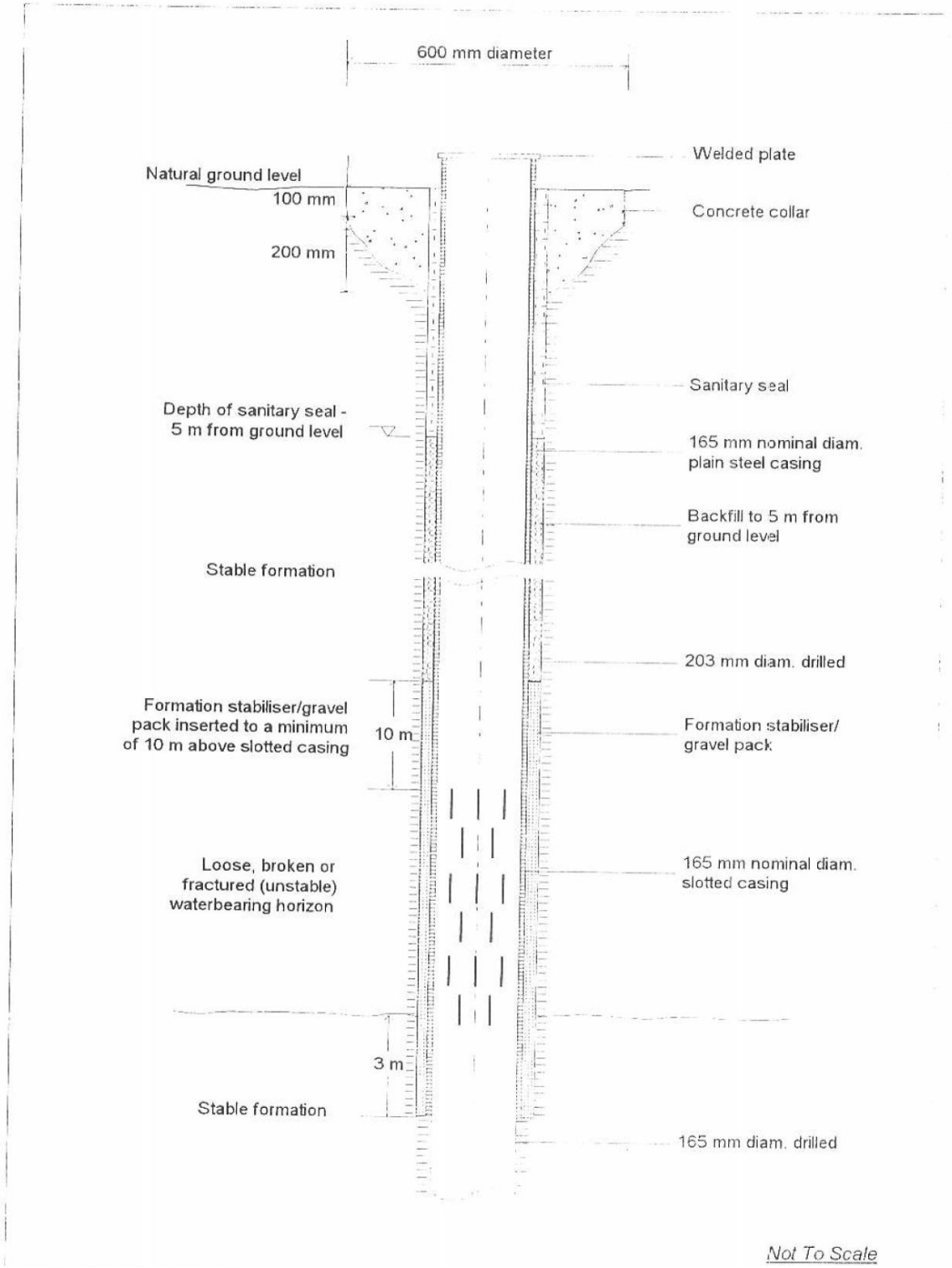
SECTION 6 – SPECIFICATION DRAWINGS, DATA RECORDINGS AND REPORTING

INDEX

NOTE: **It is required that all payment certificates be accompanied by proof that the required data recording and reporting was submitted for entry onto the GRIP Database and NGA.**

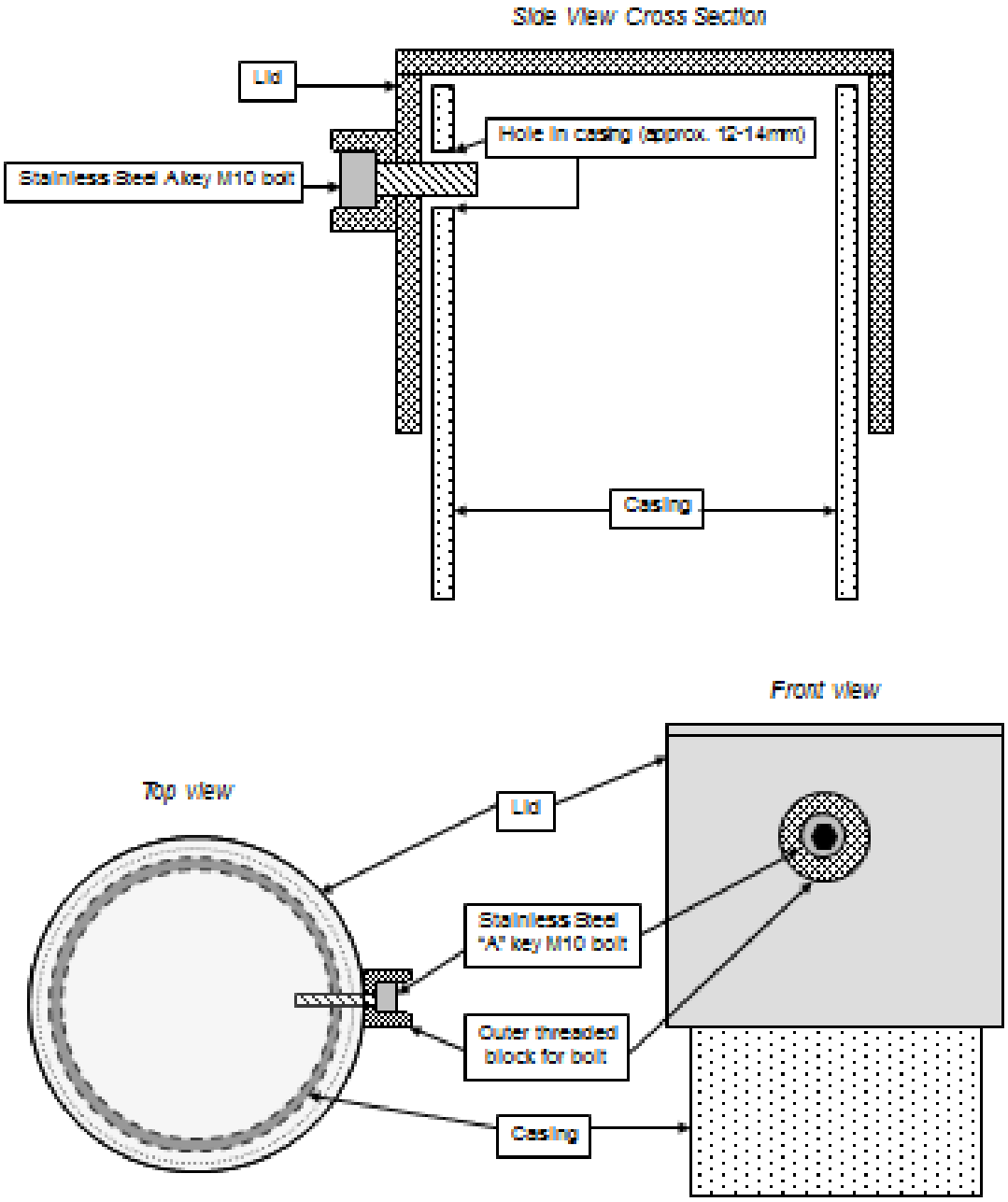


Drawing 1: Conceptual borehole design A

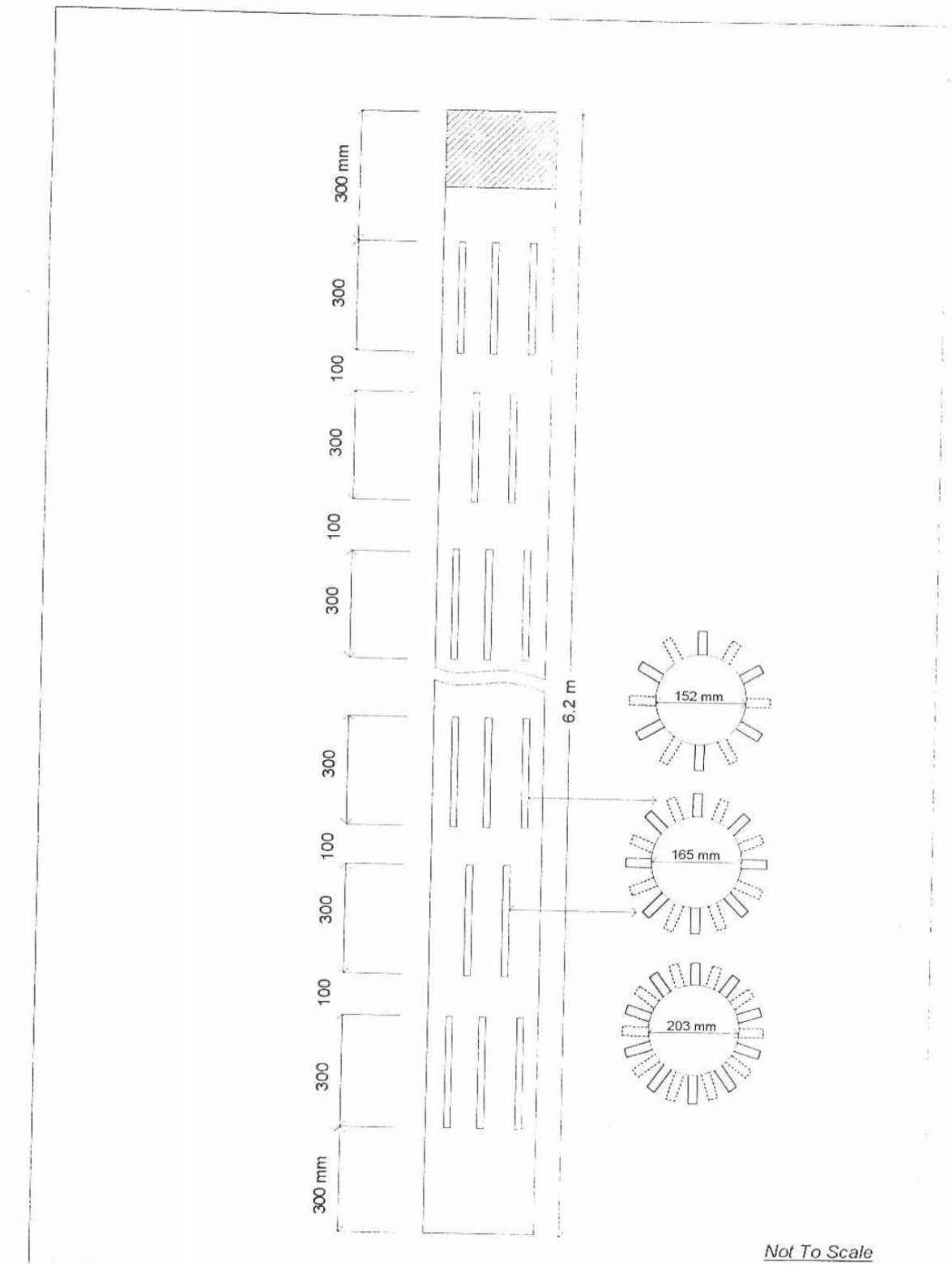


Drawing 2: Conceptual borehole design B

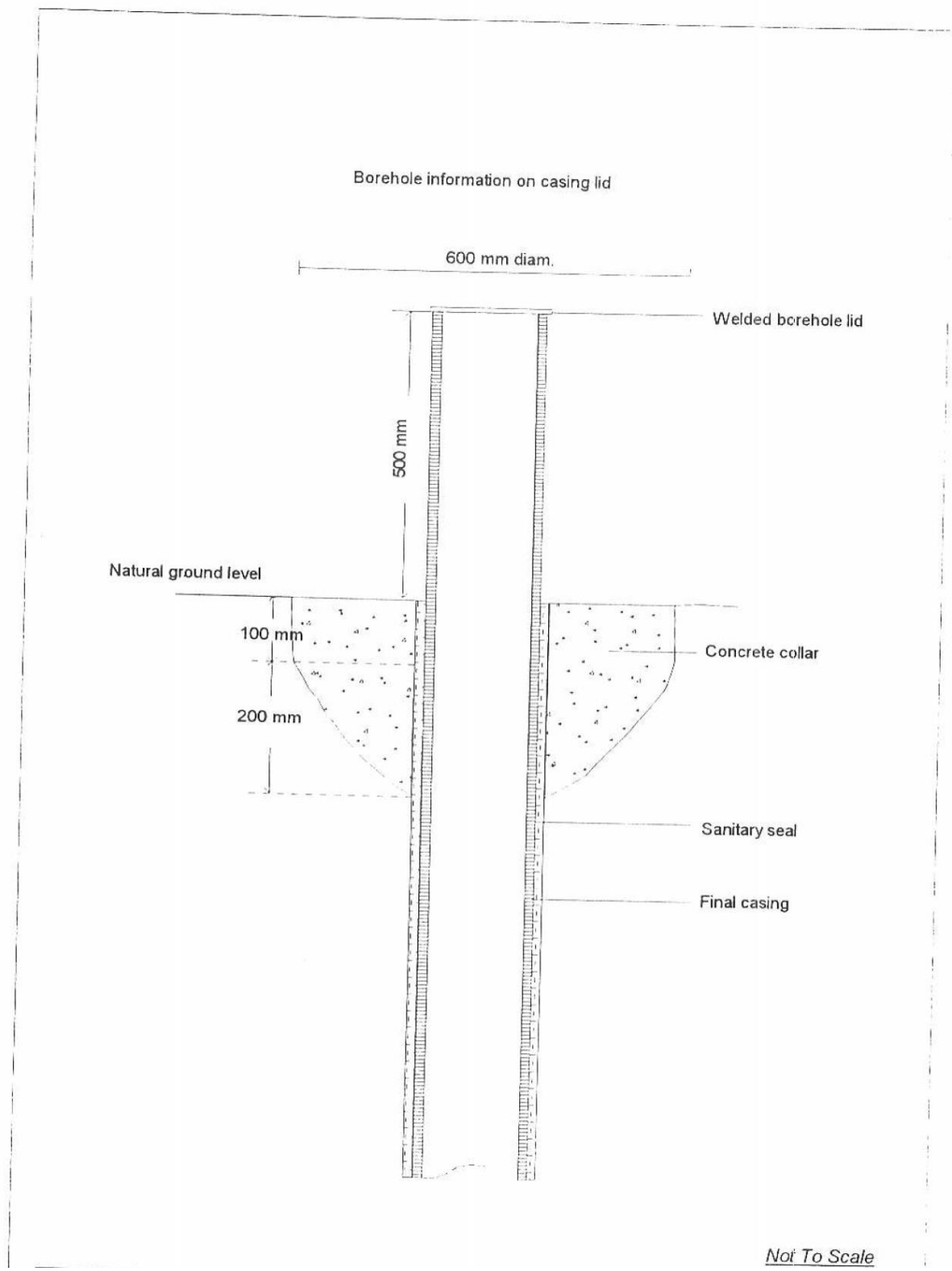
DWA APPROVED BOREHOLE LID



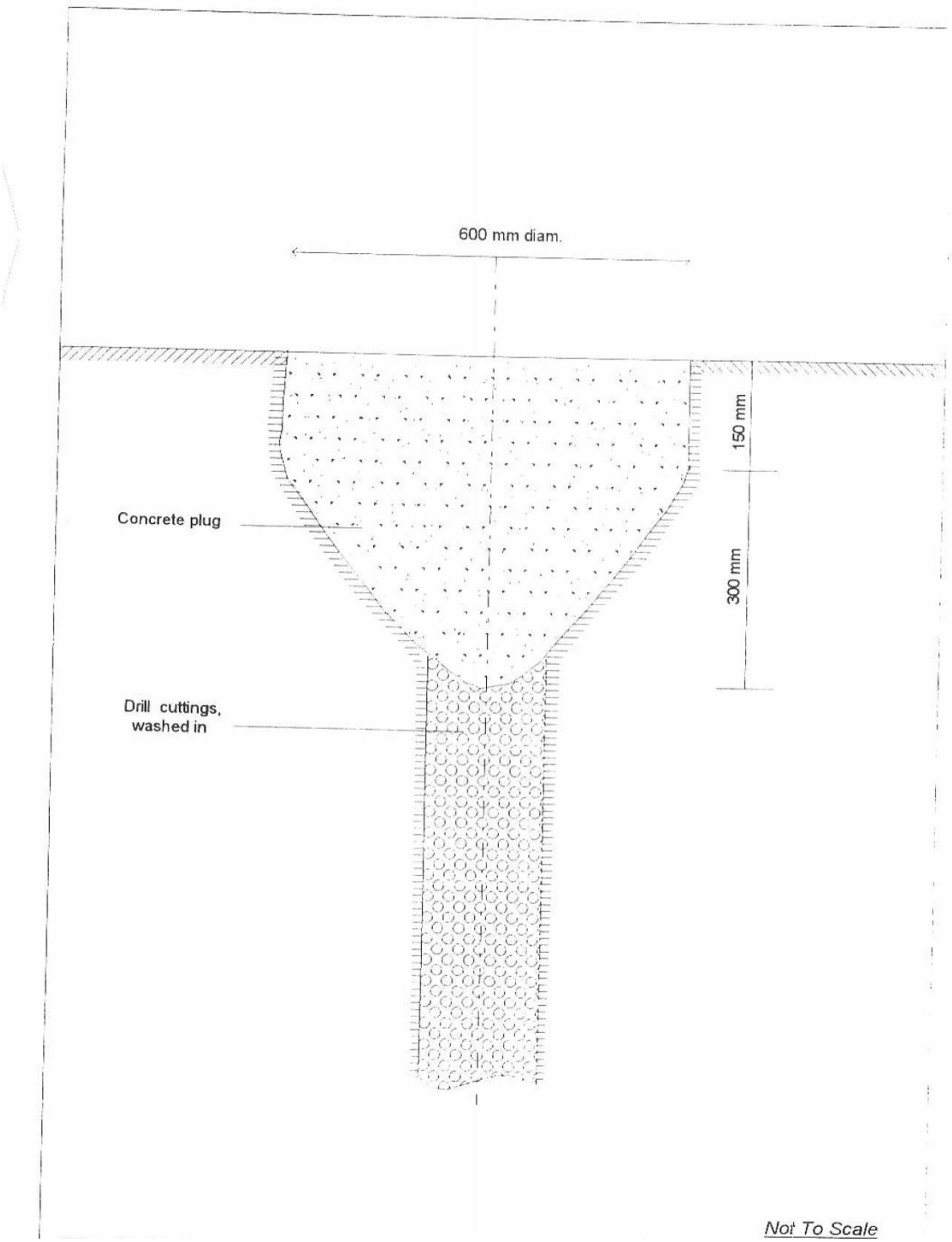
Drawing 3: Prescribed borehole lid to use



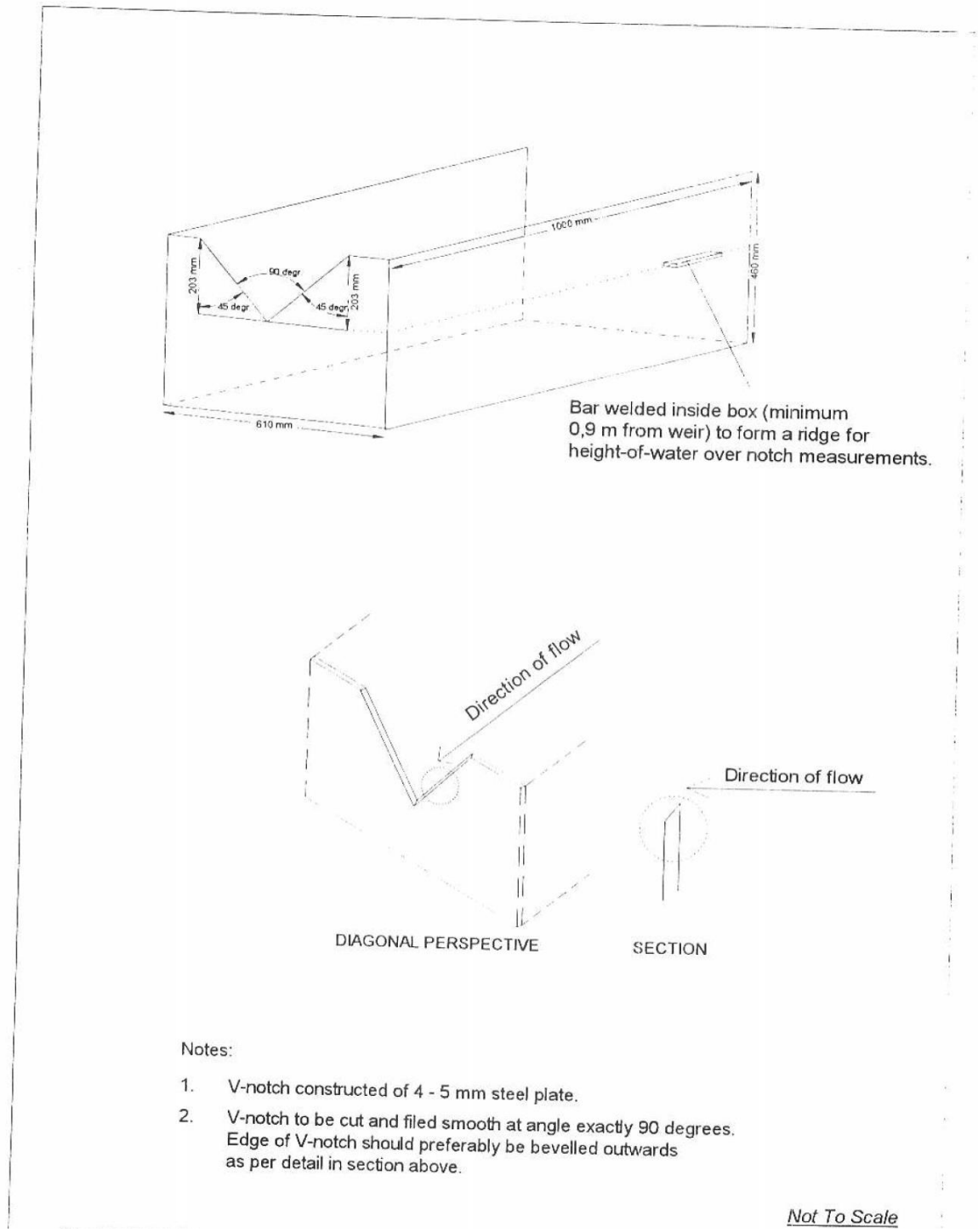
Drawing 4: Typical example of perforated/slotted steel casing



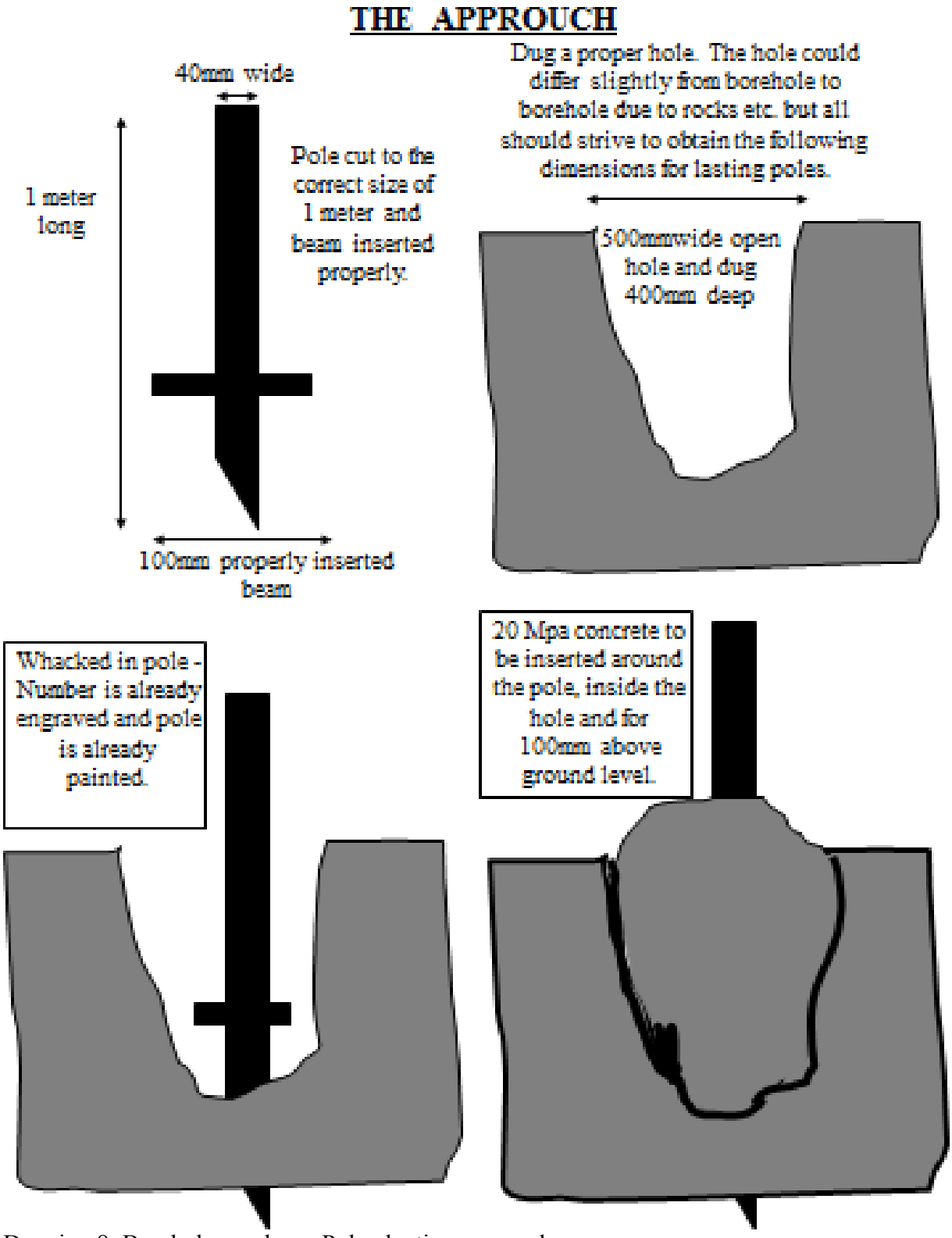
Drawing 5: Borehead finishing details



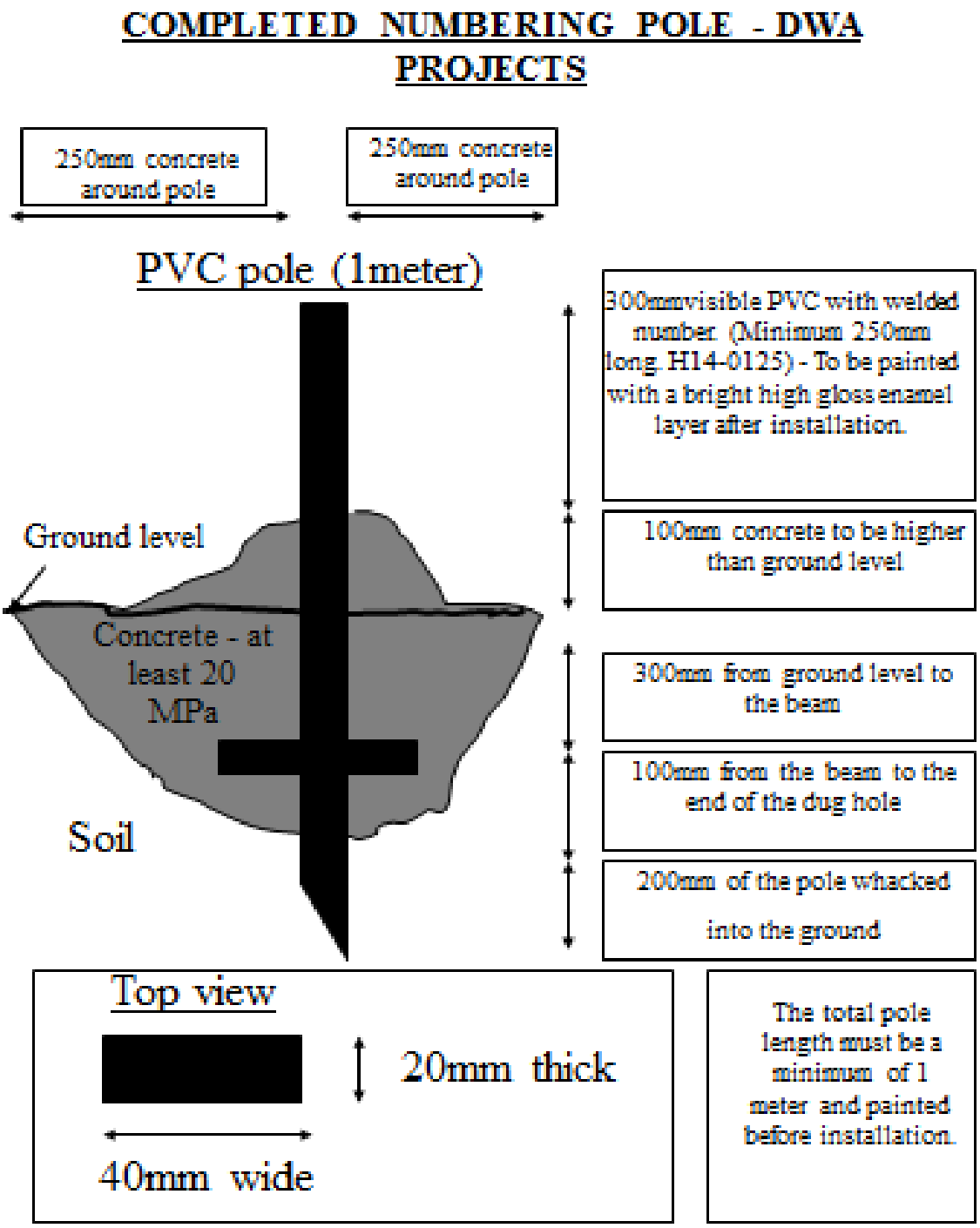
Drawing 6: Finishing of unsuccessful/abandoned boreholes



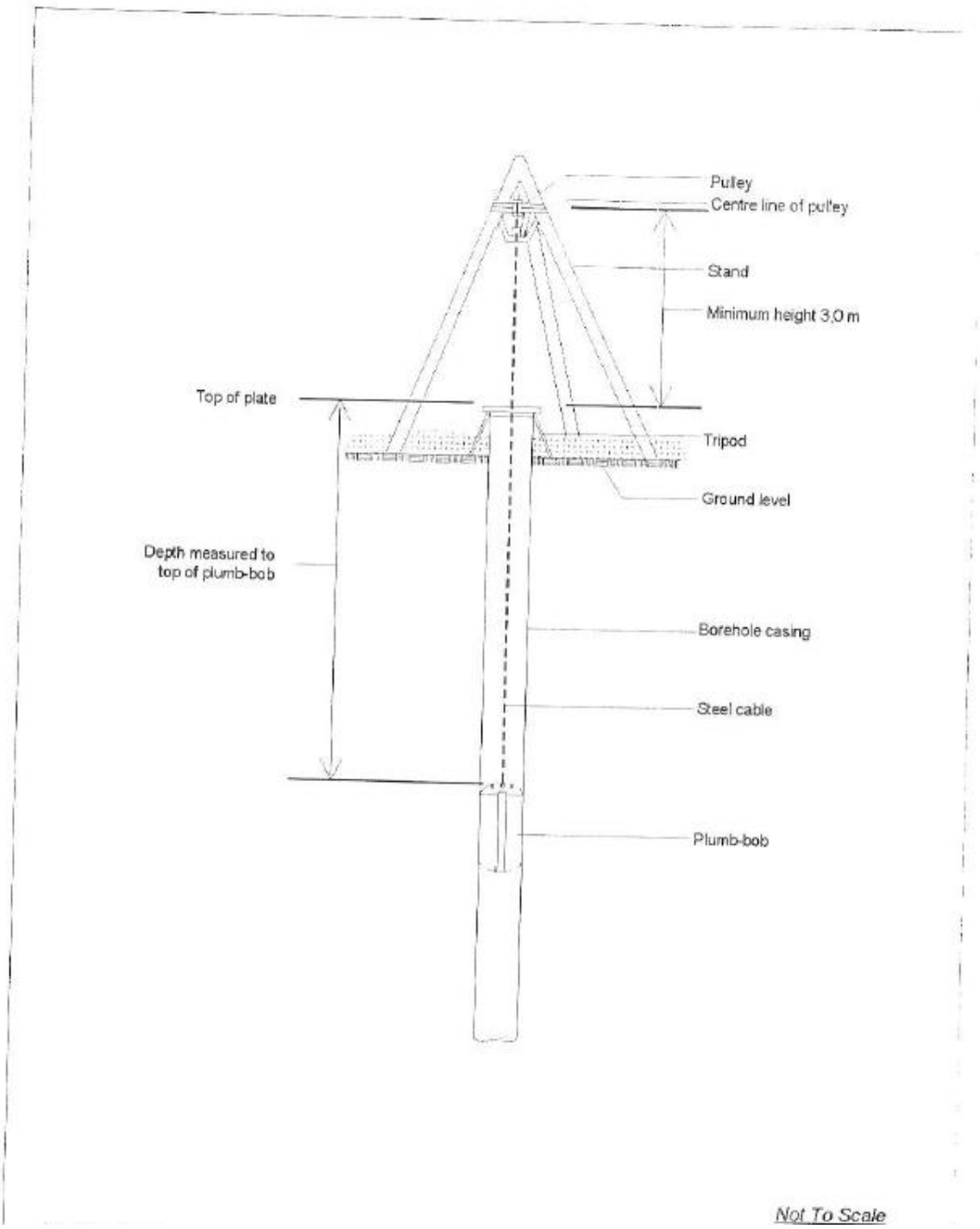
Drawing 7: Typical V-notch construction



Drawing 8: Borehole number – Pole planting approach



Drawing 9: Completed numbering pole – DWS projects



Drawing 10: Verticality Test

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF WATER AND SANITATION

COMMISSIONING CERTIFICATE
WORK DONE UNDER THE BID DOCUMENT, SECTION A
TO BE COMPLETED BY WATER RESOURCE INFORMATION MANAGEMENT, _____ PROVINCE

DATA DELIVERED TO DWS, WATER RESOURCE INFORMATION MANAGEMENT (WRIM), _____ PROVINCE **YES/NO**

WORK COMPLETED ACCORDING TO BID DOCUMENT, SECTION A **YES/NO**

_____
Consultant

_____
DWS, WRIM

_____
Print Name

_____
Print Name

FORM 1: BASIC DRILL SITE INFORMATION COVER SHEET

I _____ accept this drill log and water sample

GEOLOGICAL BOREHOLE LOG (To be completed by Consultant)

Project Name: _____

Region: _____ District: _____

Area: _____ DTC-Area: _____

Map Reference: _____ Consumer.: No information, D, N, U,

Status: D, G, U Purpose.: D, E, M, O, P, R, S, W, Z

Topo. Set. : A, B, D, E, F, H, I, L, M, O, P, R, S, T, V, W

Application: AD, AI, AS, DA, DG, E, P, TC, TE, TI, TM, TP

Location: Village / School / Clinic / Hospital / Garden / etc.

Village name: _____

Farm name & no: _____

Coordinates: Lat: _____ X: _____

Long: _____ Y: _____

Borehole Number: H _____ Geophysical peg nr: _____

Borehole depth drilled : _____ Airlift yield: _____

Collar height: _____(m) Altitude (m.a.m.s.l.): _____m

Welded? (Cased to be used)_____ pH: _____

Date started: _____ Date completed: _____

Comments: Any borehole problems during drilling _____

Drilling Contractor: _____ Borehole Logged by: _____

WAS THE VILLAGE WATER COMMITTEE INFORMED ABOUT PROPOSED ACTIVITIES? _____

I HEREBY CERTIFY THAT THE TERRAIN HAS BEEN LEFT IN A BETTER OR SIMILAR STATUS AS BEFORE THE DRILLING.

_____ _____ _____
SIGNATURE OF WATER COMMITTEE/OWNER DATE POSITION

Comments: _____

_____

FORM 2: BOREHOLE LOG

Depth: (m)	Lithology		Primary Colour		Secondary Colour		Texture		Features		Sorting		Roundness		Comments
From/To	Description	Code	Colour	Code	Colour	Code	(Grain size)	Code	Description	Code	Description	Code	Description	Code	

FINAL BOREHOLE CONSTRUCTION

Water Strikes				Casing Details						Final drilled diameter.		
Aquifer	Strike thickness		Accumulative yield	Depth to		Diam	Slotted /	Type	Thickness	Diameter	Depth to	
Type	Depth to Top	Depth to Bottom	(l/s)	Top	Bottom	(mm)	Solid		(mm)	(mm)	Top	Bottom

Sanitary Seal : **m**	**Gravel Pack/Formation Stabiliser :** **From** **to**		
Drill Cuttings : **From** **to**	**Concrete Collar :**	**YES**	**NO**

General comments

FORM 3: V-NOTCH MEASUREMENTS

V-NOTCH					
HEIGHT OF WATER IN 90° V (mm)	FLOW RATE (l/s)	HEIGHT OF WATER IN 90° V (mm)	FLOW RATE (l/s)	HEIGHT OF WATER IN 90° V (mm)	FLOW RATE (l/s)
10	0.01	102	4.64	176	17.96
15	0.04	104	4.87	178	18.48
20	0.08	106	5.1	180	19
25	0.15	108	5.34	182	19.53
30	0.23	110	5.59	184	20.07
35	0.34	112	5.85	186	20.62
40	0.47	114	6.11	188	21.18
42	0.53	116	6.38	190	21.75
44	0.6	118	6.65	192	22.32
46	0.67	120	6.94	194	22.91
48	0.74	122	7.22	196	23.5
50	0.8	124	7.52	198	24.11
52	0.88	126	7.83	200	24.72
54	0.97	128	8.14	202	25.34
56	1.06	130	8.46	204	25.97
58	1.16	132	8.79	206	26.61
60	1.26	134	9.12	208	27.26
62	1.36	136	9.46	210	27.92
64	1.47	138	9.81	212	28.59
66	1.59	140	10.17	214	29.26
68	1.71	142	10.53	216	29.95
70	1.84	144	10.9	218	30.65
72	1.97	146	11.28	220	31.36
74	2.11	148	11.67	222	32.08
76	2.25	150	12.07	224	32.8
78	2.4	152	12.47	226	33.54
80	2.55	154	12.88	228	34.28

82	2.71		156	13.3	230	35.04
84	2.88		158	13.73	232	35.81
86	3.05		160	14.17	234	36.58
88	3.23		162	14.61	236	37.37
90	3.41		164	15.07	238	38.17
92	3.6		166	15.53	240	38.97
94	3.8		168	16	242	39.79
96	4		170	16.48	244	40.62
98	4.21		172	16.96	246	41.45
100	4.42		174	17.46	248	42.3

FORM 4: BOREHOLE PENETRATION RATE LOG

To be completed by Drilling contractor

Diam. (mm)	Depth (m)	Penetration Rate (seconds)																					Yield (l/s) or mm in 90 V-Notch
EXAMPLE																							
205	1	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	0
205	2	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	0
205	3	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	0
205	4	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	0
165	5	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	0
165	6	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	15 mm
	0	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	1080	< Seconds
	1	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	2	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	3	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	4	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	5	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	6	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	7	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	8	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	9	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	10	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	11	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	12	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	13	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	14	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	15	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	16	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	17	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	18	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	19	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	20	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	21	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	22	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	23	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	24	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	32	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	34	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	35	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	36	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	37	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	38	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	39	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	40	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	41	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	42	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	43	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	44	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	45	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	46	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	47	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	48	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	49	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	50	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

Diameter (mm)	**Depth** (m)	**Penetration Rate** (seconds)																					**Yield (l/s) or mm in 90 V-Notch**
	0	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	< Seconds
	51	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	52	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	53	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	54	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	55	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	56	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	57	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	58	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	59	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	60	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	61	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	62	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	63	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	64	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	65	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	66	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	67	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	68	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	69	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	70	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	71	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	72	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	73	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	78	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	79	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	80	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	81	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	82	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	83	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	84	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	85	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	86	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	87	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	88	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	90	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	91	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	92	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	93	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	94	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	95	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	98	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	99	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	100	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	101	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	102	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	103	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	104	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	105	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	106	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	107	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	108	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

Diameter	**Depth**	**Penetration Rate**																					**Yield (l/s) or mm in 90 V-Notch**
(mm)	**(m)**	**(minutes)**																					
	0	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	< Seconds
	109	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	110	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	111	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	115	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	116	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	117	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	118	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	121	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	122	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	123	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	124	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	125	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	126	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	130	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	133	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	137	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	138	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	139	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	140	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	141	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	142	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	143	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	144	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	145	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	146	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	148	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	149	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	150	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	151	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	152	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	153	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

	154	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	155	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	157	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	160	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	161	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
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	164	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	165	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	
	166	15	30	45	60	75	90	105	120	150	180	210	240	300	330	360	420	480	540	600	660	>	

Diameter	**Depth**	**Penetration Rate**																				**Yield (l/s) or mm in 90 V-Notch**
(mm)	**(m)**	**(minutes)**																				
	167	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	168	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	169	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	170	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	171	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	172	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	173	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	174	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	175	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	176	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	177	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	178	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

	179	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	180	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	181	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	182	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	183	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	184	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	185	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	186	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	187	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	188	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	189	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	190	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	191	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	192	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	193	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	194	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	195	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	196	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	197	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	198	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	199	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	200	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	201	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	202	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	203	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	204	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	205	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	206	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	207	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	208	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

	209	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	210	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	211	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	212	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	213	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	214	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	215	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	216	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	217	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	218	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	219	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	220	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	221	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	222	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	223	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	224	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

Diameter (mm)	**Depth (m)**	**Penetration Rate (minutes)**																					**Yield (l/s) or mm in 90 V-Notch**
	225	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	226	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	227	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	228	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	229	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	230	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	231	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	232	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	233	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

	234	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	235	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	236	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	237	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	238	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	239	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	240	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	241	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	242	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	243	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	244	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	245	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	246	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	247	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	248	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	249	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	250	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	251	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	252	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	253	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	254	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	255	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	256	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	257	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	258	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	259	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	260	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	261	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	262	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	263	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

	264	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	265	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	266	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	267	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	268	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	269	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	270	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	271	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	274	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	275	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	276	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	277	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	278	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	279	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	280	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	281	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	282	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

Diameter (mm)	**Depth** (m)	**Penetration Rate** (minutes)																					**Yield (l/s) or mm in 90 V-Notch**
	283	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	284	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	285	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	286	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	287	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	288	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

	289	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	290	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	291	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	292	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	293	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	294	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	295	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	296	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	297	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	298	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	301	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	302	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	303	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	304	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	305	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	306	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	307	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	308	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	309	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	312	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	313	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	317	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	319	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	321	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	322	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	325	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	326	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	327	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	328	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	329	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	330	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	331	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	332	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	333	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	334	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	335	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	336	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
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	338	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	339	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	340	1	01:30	2	02:30	3	03:30	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

APPENDIX 1

QUETIONNAIRE AND EVALUATION CRITERIA

APPENDIX 1

QUETIONNAIRE AND EVALUATION CRITERIA

DISASTER MANAGEMENT, COMMUNITY WATER SUPPLY, RESOURCE ASSESSMENT AND RESOURCE MANAGEMENT OF GROUNDWATER

BID NO: W

DRILLING AND REHABILITATION OF BOREHOLES IN SOUTH AFRICA

APPENDIX 1

QUESTIONNAIRE AND EVALUATION CRITERIA

INDEX

COMPULSORY DOCUMENTS – QUESTIONNAIRE **W11033**

Note: None compliance to the criteria set out in Evaluation Phase 1, 2 and 3 shall render your Bid or Offer non-responsive

DOCUMENTS TO BE COMPLETED IN FULL, SIGNED AND SUBMITTED WITH BID	YES(√)	NO(√)	SIGNATURE
Did you read and understand the entire bid document?			
PHASE 1			
Compulsory Documents to be completed by Bidder			
SBD.1.1 Completed and signed			
SBD.2 Completed and signed			
SBD.4 Completed and signed			
SBD.6.1 Completed and signed			
SBD 7.2 Completed and signed			
SBD 8 Completed and signed			
SBD.9 Completed and signed			
Did you attach an Original and Valid TAX clearance certificate?			
Did you attach an original or certified copy of your Company registration certificate?			
Letter of Good Standing with the Compensation Commissioner?			
Valid Certificate of Compliance with Labour (Unemployment Fund) or Letter of Good Standing with Labour?			
Are you in a joint venture?			
If YES, attach signed agreement.			
Also submit both (all) relevant TAX clearance certificates if you are a joint venture.			
PHASE 2			
Annexure 2 Completed and signed?			
Did you fill in Schedule 2-1 Standard Drilling?			
Did you fill in Schedule 2-2-1 Specialize Drilling: Odex?			
Did you fill in Schedule 2-2-2 Specialize Drilling: Mud Rotary?			
Did you fill in Schedule 2-2-3 Specialize Drilling: Symmetrix?			
Did you fill in Schedule 2-2-3 Specialize Drilling: Auger?			
Did you fill in Schedule 2-3 High flowing Artesian boreholes?			
Did you fill in Schedule 2-4 Rehabilitation of boreholes?			
Is your offer to specification?			
Did you fully complete Section 4 –"Priority of Provinces interested"?			
PHASE 3			
Did you attach an original or certified copy of B-BBEE Rating Certification with bid? (Refer to SBD 6.1)			
Did you complete Schedule of Rates in full?			

NAME OF BIDDER: _____ NAME OF COMPANY: _____

SIGNATURE OF BIDDER: _____ DATE: _____

Appendix 1
Questionnaire and evaluation criteria

EVALUATION CRITERIA **W**

The bids will be evaluated according to the following Phase approach. If your Bid does not fully meet the criteria set out in each phase, it shall be regarded as non-responsive.

Phase 1: Administration Compliance
It's compulsory that all bidders comply with the administration requirements of this bid. Omission to complete and/or submit the listed documents will render your bid non responsive and the bid will not be considered for the phase 2 evaluation. The compulsory documents that must be completed and/or attached to the bid include;

1. An original and valid tax clearance certificate
2. Company registration certificate (original or certified copy)
3. Completed and signed standard bidding documents (SBD1.1, SBD2, SBD 4, SBD 6.1, SBD 7.2, SBD 8, SBD 9
4. Letter of Good Standing with the Compensation Commissioner
5. Valid Certificate of Compliance with Labour (Unemployment Fund) or Letter of Good Standing with Labour

Phase 2: Specification Compliance

Bidders must comply with all the technical specifications of this bid. Omission to complete and/or submit the listed documents will render your bid non responsive and the bid will not be considered for the phase 3 evaluation. The following documents must be completed in full by the bidder

7. Annexure 2 (Schedule of rates)

Phase 3: Evaluation of price and preference points claimed

6. B-BBEE Points

Bidders should note that points may be claimed for B-BBEE in terms of the Preferential Procurement Regulation, 2011.

Such claims should be accompanied by either an original SANAS accredited certificate or a certified copy of such a certificate to qualify for the points.

7. Financial Proposal

Pricing Schedule must include the total offer.