



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF WATER AND SANITATION

REQUEST FOR BID
W11406

APPOINTMENT OF A COMPANY FOR THE SUPPLY AND DELIVERY
OF HYDROLOGICAL EQUIPMENT FOR THE DEPARTMENT OF
WATER AND SANITATION: FREE STATE PROVINCIAL OFFICE:
BLOEMFONTEIN

ISSUE DATE:
19 JANUARY 2022

CLOSING DATE AND TIME:
22 FEBRUARY 2022 AT 11H00AM

SUBMIT TENDER DOCUMENT

TO

OR

Provincial Head: Free State
Province
Department of Water and
Sanitation
P.O. Box X 528
BLOEMFONTEIN, 9300

TO BE DEPOSIT IN:

THE TENDER BOX
Bloem Plaza
Corner of Charlotte Maxeke and
East Burger street
BLOEMFONTEIN, 9301
Office Hours: Monday to Friday
7H30 – 12H30
13H15 – 16H00

TENDERER: (Company address and stamp)

PART A INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF DEPARTMENT/ PUBLIC ENTITY)					
BID NUMBER:	W11406	CLOSING DATE:	22 FEBRUARY 2022	CLOSING TIME:	11H00
DESCRIPTION	APPOINTMENT OF A COMPANY FOR THE SUPPLY AND DELIVERY OF HYDROLOGICAL EQUIPMENT FOR THE DEPARTMENT OF WATER AND SANITATION: FREE STATE PROVINCIAL OFFICE: BLOEMFONTEIN				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
DEPARTMENT OF WATER AND SANITATION					
Bloem Plaza Building, Corner of Charlotte Maxeke and East Burger Street; Bloemfontein					
Office hours: Monday to Friday 7h30 – 12h30 & 13h15 – 16h00					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	E. BOSCH		CONTACT PERSON	Mr J. van Bosch	
TELEPHONE NUMBER	051 405 9000		TELEPHONE NUMBER	051 405 9258	
FACSIMILE NUMBER			MOBILE NUMBER	082 555 5046	
E-MAIL ADDRESS	bosche@dws.gov.za		E-MAIL ADDRESS	jackie@dws.gov.za	
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] ☐ Yes ☐ No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) 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 ☐ No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?		☐ Yes ☐ No [IF YES, ANSWER PART B:3]
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A BRANCH IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?				☐ YES ☐ NO	
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?				☐ YES ☐ NO	
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.					

PART B

TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED--(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
1.4. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
2. TAX COMPLIANCE REQUIREMENTS
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:

.....

(Proof of authority must be submitted e.g. company resolution)

DATE:

.....

PRICING SCHEDULE – FIRM PRICES (PURCHASES)

NOTE: ONLY FIRM PRICES WILL BE ACCEPTED. NON-FIRM PRICES (INCLUDING PRICES SUBJECT TO RATES OF EXCHANGE VARIATIONS) WILL NOT BE CONSIDERED

THE DELIVERY POINTS WILL BE ALL OVER THE COUNTRY AND THEREFORE THE DELIVERY COSTS SHOULD BE INCLUDED ON THE PRICES BY THE BIDDERS.

Name of bidder.....	Bid number: W11406
Closing Time 11:00	Closing date: 22 February 2022

OFFER TO BE VALID FOR 120 DAYS FROM THE CLOSING DATE OF BID.

1. Acoustic Doppler Current Profiler

ITEM NO	DESCRIPTION	QUANTITY	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
1.	Acoustic Doppler Current Profiler.	1	Unit Price R..... Total price: R.....
		VAT	R
		TOTAL CEILING PRICE	R

2. Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem;

ITEM NO	DESCRIPTION	QUANTITY	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
1.	Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem	43	Unit Price R..... Total price: R.....
		VAT	R
		TOTAL CEILING PRICE	R

3. Sensor for water level measurement: pressure transducer: piezo resistive sensor (stainless steel) with 4-20mA output.

ITEM NO	DESCRIPTION	QUANTITY	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
1.	Sensor for Water Level Measurement: Pressure Transducer : Piezo Resistive Sensor (Ceramic) with 4-20mA Output (0-10m range)	37	Unit Price R..... Total price: R.....
2.	Sensor for Water Level Measurement: Pressure Transducer : Piezo Resistive Sensor (Ceramic) with 4-20mA Output (0-20m range)	5	Unit Price R..... Total price: R.....
3.	Sensor for Water Level Measurement: Pressure Transducer : Piezo Resistive Sensor (Ceramic) with 4-20mA Output (0-40m range)	1	Unit Price R..... Total price: R.....
4.	Vented Transducer Cable (Total meters required)	2000	Unit Price R..... Total price: R.....
VAT			R
TOTAL CEILING PRICE			R

4. **Sensor for Weather Measurement:** Rain gauge, tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer:

ITEM NO	DESCRIPTION	QUANTITY	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
1.	Rain gauge: 0,2mm tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer	10	Unit Price R..... Total price: R.....
VAT			R
TOTAL CEILING PRICE			R

5. **Single channel data logger with integrated sensor:** pressure transducer (vented).

ITEM NO	DESCRIPTION	QUANTITY	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCLUDED)
1.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-1m range)	7	Unit Price R..... Total price: R.....
2.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-2m range)	5	Unit Price R..... Total price: R.....
3.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-5m range)	5	Unit Price R..... Total price: R.....
4.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-10m range)	54	Unit Price R..... Total price: R.....
5.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-20m range)	8	Unit Price R..... Total price: R.....
6.	Single channel data logger with integrated sensor: pressure transducer (vented) (0-40m range)	1	Unit Price R..... Total price: R.....
7.	Vented Transducer Cable (Total meters required)	3360	Unit Price R..... Total price: R.....
VAT			R
TOTAL CEILING PRICE			R

- Required by:

- At:

-
Brand and model
-
Country of origin
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s)
- Period required for delivery
*Delivery: Firm/not firm
- Delivery basis

Note: All delivery costs must be included in the bid price, for delivery at the prescribed destination.
Refer to the ToR for different delivery points.

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

*Delete if not applicable

DECLARATION OF INTEREST

1. Any legal person, including persons employed by the state¹, 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 a price quotation, advertised competitive bid, limited bid or proposal). 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, shareholder²):
 - 2.4 Company Registration Number:
 - 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 attached 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 YES / NO

employed by the state and who may be involved with the evaluation and or adjudication of this bid?

2.9.1 If 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

2.10.1 If so, furnish particulars.

.....
.....
.....

2.11 Do 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 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 IN TERMS OF
PARAGRAPH 23 OF THE GENERAL CONDITIONS OF CONTRACT SHOULD THIS DECLARATION
PROVE TO BE FALSE.

.....
Signature

.....
Date

.....
Position

.....
Name of bidder

May 2011

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2017

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, 2017.

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 R50 000 000 (all applicable taxes included); and

a) The value of this bid is estimated to **not exceed** R50 000 000 (all applicable taxes included) and therefore the **80/20** preference point system shall be applicable; or

1.2 Points for this bid shall be awarded for:

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

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

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	20
Total points for Price and B-BBEE must not exceed	100

1.4 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor 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.

- i*

3.

3.1

A maximum of 80 or 90 points is allocated for price on the following basis:

or

$$P_s = 80 \left(1 - \frac{Pt - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad P_s = 90 \left(1 - \frac{Pt - P_{\min}}{P_{\min}} \right)$$

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

P_{min} = Price of lowest acceptable bid

4. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

- 4.1 In terms of Regulation 6 (2) and 7 (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)	Number of points (80/20 system)
1	10	20
2	9	18
3	6	14
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

5. BID DECLARATION

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

6. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

- 6.1 B-BBEE Status Level of Contributor: = (maximum of 10 or 20 points)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7. SUB-CONTRACTING

- 7.1 Will any portion of the contract be sub-contracted?

(*Tick applicable box*)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

- 7.1.1 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 or QSE

(*Tick applicable box*)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

- v) Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations, 2017:

Designated Group: An EME or QSE which is at least 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		
Black people who are military veterans		
OR		
Any EME		
Any QSE		

8. **DECLARATION WITH REGARD TO COMPANY/FIRM**

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

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

[TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....
.....
.....
.....
.....

8.6 COMPANY CLASSIFICATION

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

[TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 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-BBEE status level of contributor indicated in paragraphs 1.4 and 6.1 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 paragraphs 1.4 and 6.1, 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 contributor 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) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audialterampartem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

.....

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 <i>audi alteram partem</i> 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:		

SBD 8

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) must form part of all bids¹ 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 consortium³ 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

1. Definitions
2. Application
3. General
4. Standards
5. Use of contract documents and information; inspection
6. Patent rights
7. Performance security
8. Inspections, tests and analysis
9. Packing
10. Delivery and documents
11. Insurance
12. Transportation
13. Incidental services
14. Spare parts
15. Warranty
16. Payment
17. Prices
18. Contract amendments
19. Assignment
20. Subcontracts
21. Delays in the supplier's performance
22. Penalties
23. Termination for default
24. Dumping and countervailing duties
25. Force Majeure
26. Termination for insolvency
27. Settlement of disputes
28. Limitation of liability
29. Governing language
30. Applicable law
31. Notices
32. Taxes and duties

33. National Industrial Participation Programme (NIPP)

34. Prohibition of restrictive practices

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 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.
- Js GCC (revised July 2010)

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 The DWS reserves the right to not make an award on any of the responses to this Bid.
- 35.9 The DWS reserves the right to award only parts of this bid and re-bid for other parts.
- 35.10 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.

35.11 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):



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

This template must be completed by the all suppliers and returned together with all the other quotation documents.

QUOTATION NUMBER		
DESCRIPTION OF GOODS /SERVICE		
NAME OF SUPPLIER		
QUOTATION AMOUNT		
BBBEE LEVEL		
COMPANY'S COMPOSITION OF EXISTENCE		
	% OWNERSHIP	TOTAL NUMBER
% Black ownership		
Ownership		
% Women Ownership		
% Ownership by People with disabilities		
% Ownership Youth		
SMME STATUS (eg. EME, QSE or LARGE)		

Name:.....

Position:.....

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

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.



SPECIFICATIONS FOR THE PURCHASE OF HYDROLOGICAL MEASUREMENT EQUIPMENT.

CONTENTS

1. STANDARD SPECIFICATIONS: GENERAL REQUIREMENTS

- 1.1 General**
- 1.2 Environmental Conditions**
- 1.3 Tests**
- 1.4 Test Equipment and Spares**
- 1.5 Detail Specifications**
- 1.6 General Technical and Other Requirements**
- 1.7 Regulations and Standards**
- 1.8 Schedules of Prices**
- 1.9 Training of Personnel**
- 1.10 Standard and Specifications**
- 1.11 Deviations from the Services to be Rendered**

2. STANDARD SPECIFICATIONS: SOFTWARE AND SOFTWARE DOCUMENTATION

- 2.1 Scope**
- 2.2 System Design**
- 2.3 Documentation**
- 2.4 Data Base Compilation and Building**

3. EVALUATION CRITERIA

4. DETAILED SPECIFICATIONS

1. STANDARD SPECIFICATIONS: GENERAL REQUIREMENTS

1.1. GENERAL:

- a.) This Standard Specification describes the general requirements with regard to material, equipment and workmanship and should be read together with the General Conditions of Bid, Order, Detail Specifications and Schedules.
- b.) Where any conflict exists, the relevant clauses of the Detail Specification shall take preference over the clauses of the Standard Technical Specification.
- c.) Should any conflict arise between the requirements of this standard specification and the General Conditions of Bid, the General Conditions of Bid would take preference.
- d.) The services required in terms of this specification shall comply with all the requirements of this specification, read together with the detail specification.
- e.) The Bidder shall be deemed to have examined all the constituent parts of this document carefully before the bid was submitted. Any doubts as to the meaning of any terms, phrases or clauses of the document, or any missing pages, shall be submitted to the Department in writing before a bid is submitted. No claims traceable to non-compliance with this clause will be considered.
- f.) If it is found at any stage of this bid that the Bidder has deviated from the requirements of this specification without the written consent of the Department, then the Department shall have the right to order the Bidder to remove the item(s) in question and to supply and/or install the exact equipment specified without any adjustment in the bid price.
- g.) Definitions:
For the purposes of this bid all terms used shall be as defined in section 2 of SABS code 0142-1981, Article 1 of the Machinery and Occupational Safety Act, No 6 of 1983 and other relevant SABS specifications.

1.2. ENVIRONMENTAL CONDITIONS

- a.) The equipment shall be designed to function satisfactorily under the following conditions:
- b.) Temperature range:
 - i) Storage: -50° C to +85° C
 - ii) Operating: -40° C to +70° C
 - iii) Display (On) -20° C to +70° C
- c.) Relative humidity (non-condensing): 5% to 95%,
- d.) Elevation: 0 to 3 500 m above sea level.
- e.) The equipment shall be designed to operate without degradation under dusty conditions experienced at exposed sites.

1.3. TESTS:

- a.) The Department reserves the right to instruct the successful Bidder to submit test samples of the offered equipment, sensors, application software, vandal resistant equipment housing and accessories to be tested for the following, before final awarding of the contract:
 - i) Compliance with the limits on the emission of radio frequency interference, as controlled in terms of the Radio Act.
 - ii) Satisfactory operation of the equipment at the extremes of the ambient operation conditions specified.
 - iii) The cost for the performance of these tests shall be for the Bidder's account.
- b.) It is a condition of this bid that, on request of the Department, the Bidder shall be able to demonstrate, within 2 weeks, after the closure of the bid, a unit of the equipment offered to the Department before the bid shall be awarded. On request of the Department, the Bidder shall make available a unit for testing. The Department will submit this request within two weeks after the closing date of this bid. The bid will be awarded after the Department is fully satisfied with the testing results performed.

Failure to comply with these requests will invalidate the bid offer.

- c.) All materials and workmanship shall be of the respective kinds described in the bid and in accordance with the Department's instructions and shall be subjected from time to time to such tests and by such persons as the Department may direct at the place of manufacture or fabrication or on the site or at all or any of such places. Excepts as otherwise provided in the specification the Bidder shall supply such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing of any work and the quality, mass or quantity of any materials used and shall supply samples of material before incorporation in the works for testing as may be selected and required by the Department.
- d.) All samples shall be supplied by the Bidder at his own cost if the supply thereof is clearly intended by or provided for in the specification but if not, then at the cost of the Department.
- e.) The cost of making any test shall be borne by the Bidder if such test is clearly intended by or provided for in the specification and (in the case only of a test under load or a test to ascertain whether the design of any finished or partly finished work is appropriate for the purposes which it was intended to fulfil) if such is particularised in the specification in sufficient detail to enable the Bidder to price or allow for the same in his bid.
- f.) If any test is ordered by the Department which is either-
 - i) not so intended by or provided for; or

- ii) not so particularised; or
- iii) though so intended by or provided for is ordered by the Department to be carried out by an independent person or body at any other place than the site or the place of manufacture or fabrication of the materials or equipment tested; then the cost of such test shall be borne by the Bidder if the test shows the workmanship of materials not to be in accordance with the provisions of the bid or the Department's instructions, but otherwise by the Department.

1.4. TEST EQUIPMENT AND SPARES:

- a.) It is a requirement of this bid that the Bidder shall have available all the test equipment that would be required to allow the Department's staff to commission any part of any system provided in terms of this bid.
- b.) The exact test equipment required will depend on the systems supplied and the Bidder shall submit a complete list of the test equipment to be used.
- c.) The Bidder shall recommend spares that would be required on site for emergency repairs, complete with unit costs for consideration by the Department.

1.5. DETAIL SPECIFICATIONS:

- a.) Bidders are advised that it is in their own interest to provide accurate and detailed information in answer to all the questions asked in the Detail Specifications, which appear in Section 3 of this specification.

Failure to comply with this request will invalidate the bid offer.

1.6. GENERAL TECHNICAL AND OTHER REQUIREMENTS:

- a.) All submersible instrumentation shall function reliably in water with a high saline content as well as a high silt content, including various chemical pollutants (including sulphates and phosphates) originating from agricultural run-off and other human sources.
- b.) Only high quality equipment capable of offering extended service under arduous, hostile conditions in a long-term installation, on unmanned sites, shall be offered.
- c.) All instrumentation shall fully comply or exceed the specifications laid down in this Section. No deviation from the specified standards will be accepted.
- d.) Only microprocessor-controlled, frequency-synthesis instrumentation incorporating the latest in surface-mount technology shall be acceptable.

- e.) Bidders shall not offer instrumentation that has been superseded by later models or that will be discontinued in the near future. All instrumentation offered shall be of the most recent design. Should the Bidder be aware of any impending modifications or new equipment he / she shall state the expected implications of such in his / her offer.
- f.) Except when otherwise specified, all equipment shall be suitably protected against lightning and surge damage, up to 2 kV; the relevant test certificates should preferably accompany the bid offer or shall be made available on request to the Department.
- g.) Labels:
 - i) The instrumentation shall have durable, clearly legible labels, indicating the make, model, serial number, ratings and other relevant information.
- h.) Mounting Brackets:
 - i) All mounting brackets for the instrumentation, where applicable, need to be robust and be insensitive to impact and vibration. Where possible, it should be manufactured from corrosion-resistant material, preferably stainless steel, or the equivalent thereof.
- i.) All data logger software updates will be supplied free of charge during the contract period. These upgrades will be delivered / sent / emailed by the bidder to the relevant offices, which make use of the bidder's equipment.
- j.) Should the Bidder or Manufacturing Company do any additional development during the contract period, on any item awarded to him / her, the Bidder will inform the Department in writing of such action. The Bidder will also outline what the effect it will have on the current contract and/or equipment.
- k.) Should a newly developed model of any of the offered equipment be introduced into the open market, the Bidder can supply such equipment on the following conditions:
- l.) The Department will be informed in writing and only after the equipment has been tested and satisfying results have been obtained, the Department can approve such action.
- m.) The Department will still have the option to purchase the older model.
- n.) The newly developed item will be offered at no additional cost.

1.7. REGULATIONS AND STANDARDS:

- a.) All material and equipment supplied shall be new and of an acceptable quality.
- b.) Any conflict that should arise between any of the above mentioned regulations and this specification shall forthwith be referred to the Department in writing for his ruling. Under no circumstances shall the Bidder modify any part of the works to comply with amended regulations that may come in force during the construction period before the matter has been cleared with the Department.

1.8. SCHEDULES OF PRICES:

- a.) The attention of Bidders is drawn to the Schedules of Prices which form part of this specification and which are to be completed in full.
- b.) **On the Pricing Schedule, Bidders will be evaluated per item marked and the marked item must be completed in full. Bidders are required to complete price for items that they are only bidding for.** Bidders who do not adhere to this request will be disqualified and their bids will not be considered.

Failure to comply with this request will invalidate the bid offer.

1.9. TRAINING OF PERSONNEL:

- a.) Training provided by the Bidder shall be directly applicable to the actual equipment to be used at the installation. All training shall be carried out online through virtual meetings or on site, unless otherwise requested by the Department.
- b.) Three categories of training for technical personnel are required, viz:
 - i) Installation training;
 - ii) Operation training;
 - iii) Maintenance training.
- c.) The Department will bear the cost of salaries, accommodation and other allowances and travelling expenses of its personnel, but all other expenses shall be borne by the Bidder. The Bidder shall provide all course material including manuals.
- d.) The Bidder shall indicate his proposals and local facilities to provide training in particular aspects of operation and maintenance of the equipment being offered.
- e.) Training courses shall be made available and completed within the period of six months after the bid is awarded.
- f.) At the conclusion of the training periods, both in regard to the operation and maintenance of the equipment, the Department will give the Bidder a signed statement to the effect that these training sessions were adequate.

1.10. STANDARD AND SPECIFICATION

- a.) The offered equipment with regard to its operational performance is to be in strict accordance with each and every term of the documents listed below:
 - i) The Standard Specifications;
 - ii) The Detail Specifications.

- b.) The Bidder shall be required to provide back-up and maintenance on all the equipment supplied.
- c.) Next to each detail specification a block is provided for the bidder to complete the following:
- i) Offered equipment / item to specification - ☐ **Y** or ☒
 - ii) Offered equipment / item not to specification - ☐ **N** or ☒ **X**
 - iii) Should the bidder not be sure if offered equipment / item is to specification: ☐ **?**
 - iv) The bidder must initialise each page, he/she has filled and completed.

1.11. DEVIATIONS FROM THE SERVICES TO BE RENDERED:

- a.) If, in their offers to meet these specifications, there are any deviations whatsoever from any of the provisions, or from any of the terms set out in Standards and Specifications, then Bidders shall list each and every deviation. The list, which shall accompany the bid offer, shall be so numbered as to correlate each deviation from the relative paragraph contained in the documents listed.

Failure on the part of any Bidder to meet this requirement in full shall signify compliance with the terms and conditions of the contract.

2. STANDARD SPECIFICATIONS: SOFTWARE AND SOFTWARE DOCUMENTATION

2.1. SCOPE:

- a.) This specification covers the design and documentation requirements for software supplied under this bid.

2.2. SYSTEM DESIGN:

- a.) The system shall make use of a well-defined, standard, tested, debugged and field-proven operating system to control other programme modules which handle the user functional requirements. The operating system shall be capable of handling all input/output organization, scheduling, time-keeping, power failure procedures and to control communications with field hardware and operator devices, process system outputs and command requests.
- b.) The operating system shall initialize software upon restart conditions and allocate memory usage of application programmes. Furthermore, the operating system shall enable the system operator to create, store and run application and user programmes while operating system is busy controlling the real time application system. This user programme modifying facility should be menu driven under operating system control to enable operations to easily effect user system changes.
- c.) The operating system shall preferably reside in firmware and the software shall be task orientated, with linking and synchronisation possible between tasks. Tasks shall be allocated priorities and shall be able to control themselves relative to real-time so that the complete system is not "hung-up" by a faulty input device, such as chattering alarm relay.

2.3. DOCUMENTATION:

- a.) The successful Bidder shall supply full software documentation within two months after the delivery date of the equipment.
- b.) Four copies of each of the following shall be provided:
 - i.) A system manual containing detailed description of the operating system and the drivers of each software module, task or sub-module used. This description shall clearly specify the functions and structure of each module and the interfaces and links between them. This manual shall also describe how new software modules can be added, running under the same operating system.
 - ii.) A manual containing a complete set of programme listings.
 - iii.) An operator's manual, specifying all the system operating procedures in detail, for each system forming part of this bid.

- iv.) A software user's manual (for each system) providing detailed information on how additions to the system can be generated, for instance the addition of an out-station, creation of a new access control category etc., or how system parameters can be changed or deleted. This manual should avoid the use of computer system jargon, shall include a definition of terms used and shall be written in such a way that operators without formal computer hardware or software training will be able to effect the changes as far as possible.

2.4. DATA BASE COMPILATION AND BUILDING:

- a.) The successful Bidder shall create, edit, debug and put into operation the initial data base required for each system to be supplied in terms of this document. The data base shall be compiled and built from the specified parameters and from information which will be supplied by the Department where applicable.
- b.) Bidders are, therefore, required to allow for the compilation of the required data basis in their bids.

3. EVALUATION CRITERIA

The department of Water and Sanitation will evaluate all proposals in terms of the Preferential Procurement Regulations 2017. A copy of the Preferential Procurement Regulations 2017 can be downloaded from www.treasury.gov.za. In accordance with the Preferential Procurement Regulations 2017, submissions will be adjudicated on a 80/20 points system and the evaluation criteria. A three phase evaluation criteria will be considered in evaluating the bid.

Phase 1: Pre-Qualification Criteria

Phase 2: Administrative Compliance

Phase 3: Functional / Technical Evaluation

Phase 4: Points awarded for Price and B-BBEE Status Level of Contribution (80/20 Preferential System)

Phase 1: Pre-Qualification Criteria

The following pre-qualification criteria will be applicable:

Only bidders who are the following will be considered for this bid:

- EMEs
- QSEs
- BBBEE status level of contributor Level 1
- BBBEE status level of contributor Level 2

The pre-qualification criteria will be based on the market analysis report that will be shared with members by the Secretariat.

NB: Bidders who do not qualify with the pre-qualification criteria will be disqualified and not considered for phase 2.

Phase 2: Administrative Compliance

Bidders are required to comply with the following listed below:

No	Criteria	Yes	No
1	Companies must be registered with National Treasury's Central Supplier Database. Provide proof of print out from CSD.		
2	Tax compliant with SARS (to be verified through CSD and SARS).		
3	Complete, sign, submit SBD 1, SBD 3.2, SBD 4, SBD 6.1, SBD 8, SBD 9		
4	General Conditions of Contract (GCC)		

Phase 3: Functional / Technical Evaluation

The specification questionnaire below is the third phase evaluation of the proposals to be in compliance with the detailed specifications.

Next to each detail specification, a block is provided for the bidder to complete the following:

- Offered equipment / item to specification - ☐ **Y** or ☒
- Offered equipment / item not to specification - ☐ **N** or ☒ **X**
- Should the bidder not be sure if offered equipment / item is to specification: ☐ **?**
- The bidder must initialise each page, he/she has filled and completed.

Suppliers are required to indicate accordingly. Failure to indicate such will result in your bid being disqualified.

NB: The bidders will be evaluated per item offered and therefore may bid for one or more items listed. The table below lists the number of items to be bid for and bidders are required to tick next to the item they are bidding for. **Only the ticked items will be considered for evaluation.**

Item No.	Item Description	Tick for item bidding for:
1	Acoustic Doppler Current Profiler	
2	Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem	
3	Sensor for water level measurement: pressure transducer: piezo resistive sensor (stainless steel) with 4-20mA output, range and cable length will be supplied additionally	
4	Sensor for Weather Measurement: Rain gauge, 0,2mm tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer	
5	Single channel data logger with integrated sensor: pressure transducer (vented) , range and cable length will be supplied additionally	
6	Vented Transducer Cable (Total meters required)	

Note: All suppliers who meet the requirements in terms of Phase 3 above, will be considered further for evaluation under Phase 4 as provided below.

Phase 4: Points awarded for Price and B-BBEE Status Level of Contribution (80/20 Preferential System)

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 (80/20 system)
1	20
2	18
3	14
4	12
5	8
6	6
7	4
8	2
Non-Compliant contributor	0

Conditions:

- Bidders are kindly requested to submit original only
- Bidders are required to submit a certified and valid B-BBEE Status Level Verification Certificates together with their bids, to substantiate their B-BBEE rating claims.
- Fraudulent practices shall result in immediate disqualification.
- It is a requirement that bidders who do business with government must comply to the relevant tax legislations and bidders are required to ensure that their Tax Matters are in order and up to date. The Department may invalidate your bid should it find that your Tax Compliant Status (TCS) is not in order.
- DWS reserves the right to not award the bid should suitable bidders not be identified.
- **It is a condition that the DWS further reserves the right to award the bid to multiple service providers for the respective items. The awarding of the bid is not limited to a single bidder. The awarding can be done to different bidders for different items offered.**

BRIEFING SESSION AND ENQUIRIES

- Due to the COVID restrictions on gatherings and to allow for maximum participation of the prospective service providers, the department will not be holding any formal briefing session.
- In order to attend to any specific questions to this Terms of References, service providers are required to submit their formal enquiries directly to the Project Manager and the SCM office.
- Service Providers will submit their questions and the department will respond to such questions and also upload all questions and answers on the departmental website www.dwa.gov.za

For technical enquiries contact: Mr Chris Hattingh, 051-405 9238 or 082 555 6749,
Email: HattinghC@dws.gov.za

For Supply Chain Management enquiries contact: Me. Evelyn Bosch, 051-405 2276
Email: BoschE@dws.gov.za

4. DETAILED SPECIFICATIONS

- 4.1. Acoustic Doppler Current Profiler**
- 4.2. Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem**
- 4.3. Sensor for water level measurement: pressure transducer: piezo resistive sensor (stainless steel) with 4-20mA output**
- 4.4. Sensor for Weather Measurement: Rain gauge, tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer**
- 4.5. Single channel data logger with integrated sensor: pressure transducer (vented)**
- 4.6. Table 1: Description of quantities required**

4. DETAILED SPECIFICATIONS

4.1 Acoustic Doppler Current Profiler.

4.1.1 General

This instrument will make use of the Acoustic Doppler principle and will mainly be utilised in small streams / rivers.

Bottom tracking and Global Positioning should be performed by this instrument for discharge calculation.

4.1.2 Carrying Vessel:

- a) The vessel must be robust, corrosion resistant, stream lined and the hull design should preferably be of the Hydro-board, Catamaran or Tri-maran type.
- b) The vessel shall be designed and be tested to be stable in rough water conditions and currents of up to 5 m/s.
- c) The vessel should preferably not exceed 1 500 mm length, 900 mm width and 10 kg weight (boat alone).
- d) The profiler shall be fitted to the vessel in such a manner that minimum damage to the profiler could be caused by any floating debris.
- e) The power supply and communication system shall be built into a compartment on/in the vessel and should be watertight.
- f) The option must be provided to upgrade the existing system to the latest available system by upgrading the carrying vessel individually.

4.1.3 Acoustic Doppler Current Profiler:

- a) The instrument body must be robust, corrosion resistant, watertight and insensitive to vibration.
- b) The instrument should include bottom tracking and must be able of measuring discharge accurately, within 1% of true water depth, in water depths of less than 7 m.
- c) The profiler should have a minimum of five transducer beams, operating between 0.5 MHz and 5 MHz.
- d) The instrument shall provide parameters that can be used to assess the validity of the velocity and / or discharge measurement. These parameters must identify when conditions violate limits of the system, thus threatening data integrity, i.e. Low signal correlation, unusually strong increases in signal intensity, high error velocities and uncertainty of water depth.
- e) The following measurement accuracies will apply:
 - Velocity measurement range of between 0.0 m/s and 5.0 m/s.
 - Velocity accuracy of $\pm 0.5\%$ of measured velocity.
 - The current should be measured in depth cells of a minimum of 10 cm., or better.
 - Compass / tilt sensor resolution: 0.1 °;
 - Compass / tilt sensor precision: 1 °;

- Compass / tilt sensor pitch accuracy: 1 °;
 - Compass / tilt sensor heading accuracy: 0.1 °;
- f) The instrument should be able to operate within the following environmental conditions: 0°C to 30°C (water temperature) and -5 °C to 45 °C (air temperature).
- g) The instrument should have a built-in temperature sensor, which can measure between -2°C to 30°C with an accuracy of 0.5°C or better.
- h) The option must be provided to upgrade the existing system to the latest available system by upgrading the Acoustic Doppler Current Profiler individually.

4.1.4 Power Supply:



- a) The power supply for the profiler and communication system should be commercially available dry cell battery / batteries or rechargeable sealed lead-acid battery / batteries.
- b) The power switch to power up the complete system should be placed on the boat in such a manner that it has easy access to the operator – no unscrewing of lids, etc.
- c) Provision must be provided to protect against damage in the event of reverse polarity connection. In the event of such a connection, it should not be necessary to open the water-tight case to replace fuses or to reset the profiler.
- d) The option must be provided to upgrade the existing system to the latest available system by upgrading the power module individually.

4.1.5 Communication-, Cable- and Connector requirements:



- a) The profiler shall be equipped with a data interface that conforms to the referenced industry standard EIA-232-D. Communication with the computer for purposes of setup and data acquisition shall be conducted through this interface.
- b) Communication rates as low as 9 600 baud and at least as high as 115 200 baud shall be supported. The user shall be able to specify the communication rate for data acquisition.
- c) The profiler shall connect directly to its primary battery source and to the computer through a single, fully removable cable.
- d) The cable shall be no longer than needed for use in a small boat, approximately 3 m, with longer versions of up to 30 m offered as an option.
- e) The cable shall connect to the profiler through a keyed, self-purging, waterproof connector.
- f) The connector shall use a robust keying mechanism that will not easily degrade over time by the effects of frequent connect-disconnect cycles.
- g) The option must be provided to upgrade the existing system to the latest available system by upgrading the communications module individually.

4.1.6 User Interface / Software:



Software is required to interact with the profiler in real-time, to configure the profiler, and to display the results of measurement made with the profiler.

a) Computer Compatibility:

- The software should run on the latest operating system used by the department, Windows 10 Enterprise.
- The software shall be written in such a way that screen updates from the ADCP are displayed quickly enough to not interfere with the interpretation of the data being collected and resulting discharge being measured.

b) Profiler Firmware:

- The profiler firmware updates, should it be deemed necessary, should be made by using some form of communications software and without requiring the user to open the profiler case.

c) System Configuration:

- The user shall be able to use the software to configure the profiler and the software in preparation for discharge measurements. The user shall also be able to review and edit all information that has been entered for a measurement in a file for documentation purposes, and so that it may be used for other measurements.
- The user shall be able to review and edit imported information prior to conducting measurement.

d) Diagnostic Tests:

- Provision should be made in the software program for real-time and / or post-measurement diagnostics test. Such tests should verify that the various system components are operating properly and the data being collected are suitable for an accurate determination of discharge.

e) Real-Time Calculations:

- The program shall perform the calculations required to determine discharge from the data acquired from the ADCP, including the following:
 - Measured discharge for each depth cell;
 - Unmeasured, but estimated, discharges near to the surface and bottom.
 - The estimated discharge for both the left and right banks, and
 - Summation of the total discharge measured to this point.
- Above estimated discharges shall be derived from commonly accepted and hydraulically sound methods.

f) Real-Time Displays:

- The program shall provide display options for the user to observe the progress of ongoing measurements and monitor the status and quality of data being collected.

g) Text Displays:

- The following minimum data will be displayed:
 - Velocity and Discharge for each ensemble and depth cell.
 - Signal intensity for each ensemble and depth cell.
 - Boat velocity, heading, pitch & roll and depth information for each ensemble.
 - Discharge measurement summary for each measurement, which could consist of four or more transects.
- The discharge measurement summary shall be updated with each acquired data ensemble and shall include the following:
 - Measurement number and location.
 - Configuration filename.
 - Data filenames.
 - Recording Status.
 - Course length and width.
 - Start and end dates and times.
 - Elapsed time.
 - Number of ensembles.
 - Cross-section areas.
 - Average depth.
 - Mean Flow Velocity
 - Discharge Summary

h) Graphics Displays:

- The following minimum graphics should be displayed:
 - Flow velocity profile.
 - Signal intensity profile.
 - Signal correlation profile.
 - Graphical depiction of method for velocity profile extrapolation.
 - Cross-section plots of flow velocity.
 - Cross-section plots of signal intensity.
 - Cross-section plots of signal correlation.
 - Boat path plots.
- Contours of the measured velocity over the width and depth of the cross-section shall also be displayed.

i) Discharge Measurement Summary:

- The program shall compile and store an original record of the data acquired and calculated for each discharge measurement. The discharge summary should include the following:
 - Data acquired from the current profiler.
 - Data acquired from any optional navigation instruments used with the ADCP, such as GPS or echo sounders.
 - Data calculated by the program.
 - Discharge measurement summary, including:

- Time and date of measurement.
- Location of measurement.
- Total discharge.
- Bank-section discharge estimates.
- Surface-layer and Bottom-layer discharge estimates.
- Mean depth.
- Mean flow velocity magnitude and direction.
- Cross-section and path-section widths and areas.
- Setup configuration.
- Measurement notes.

j) Data Files:

- Data files shall be stored in a binary format that is compatible with the Data Acquisition software as well as any other utility programs available with this instrument.

4.1.7 Application Software. ☐

- a) A Software package for the automatic computation of discharge measurements, according to the relevant ISO & WMO standards, should be included within the hand-held unit and will be user friendly.
- b) All other parameters related to the profiler operation should be easy selectable by the user. This includes depth cell size, number of depth cells and averaging time for each profile.

4.1.8 Global Positioning System ☐

- a) The instrument should include a GPS interface to receive GPS information and should be able to accept a NEMA GGA or NEMA VTG string. A good quality GPS receiver with accurate differential corrections for robust real-time operations with one second or faster update interval should be offered.

4.1.9 Accessories: ☐

- a) The appropriate data transfer cable for extracting data from the unit to another PC or Laptop, should be included in the offer.
- b) The appropriate tools to service and connect the equipment should be included in the offer.
- c) All equipment should be packed in suitable robust instrument carry case/s.
- d) A profiler that could be fixed via a corrosion free bracket onto larger boats (3 – 5 m in length) should be offered as an optional item.
- e) Optional carrying vessel: 0.8 m length for maximum 4.0 m/s velocity, adaptable for remote operation;
- f) The DGPS offer should include all registration / air-time / service provider fee/s for the bid period.
- g) Software to eliminate discharge errors with the movement of river beds can be offered as an option.
- h) A list of general spares / Services that are available on this instrument will be listed and priced in the Price Schedules – “Spares”.

4.2 Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem;

4.2.1 Application:

☐

- a) The submersible multi-channel GSM data logging system would be installed at remote gauging stations and used for primary or secondary real-time or backup data collection applications where water levels and rainfall is measured.

4.2.2 Design and technical details:

☐

- a) The equipment shall be designed to function satisfactorily under the following conditions:
- Operating temperature range: -20°C to 50°C;
 - Relative humidity: 100%;
 - Submersible: IP67 (or higher):
 - Solid particle protection: Dust tight; and
 - Liquid ingress protection: Immersion, up to 1-meter depth for 30 minutes;

4.2.3 Multi-channel data logger:

a) Data Processing:

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- Only intelligent data loggers, equipped with a microprocessor will be considered.
- The data logger shall be equipped with a CPU watchdog circuit that will automatically restart the system in case of a severe electrical or electromagnetic disturbance.
- The multi-channel GSM data logger must have at least eight channels that can be user configurable to simultaneously record 4-20mA inputs from water level sensors, digital pulse inputs from tipping bucket rain gauges and internal battery voltage of the data logger.
- Build options for up to two pressure, eight (user programmable) digital or analogue inputs and two individually switched 12 Volt outputs for powering 4-20mA loop.
- High frequency pressure transient detection critical to extending asset life and network modelling.
- Facilitates closed loop control of pressure reducing valves, pressure sustaining valves and variable speed pumps.
- Integral movement detection aiding preventative maintenance routines, asset tracking and enhanced data integrity critical for reporting.

b) Real time clock:

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- The data loggers shall be equipped with battery backed hardware real time clock system.
- The real time clock system shall provide time (24-hour system) and date information.
- Crystal controlled calendar clock with leap year adjustment Option to synchronise clock to local network at regular intervals

c) Memory:

The data loggers shall be provided with the following types of memory systems:

- Solid state, non-volatile memory for system and station parameters and user defined variables allocable between channels as required (max 64K per channel).
- The memory size: 512K.
- Recording Interval programmable between 1 second and 1-hour.
- Data storage: Rotating store or store until full.
- Supports average and statistical recording of pressure (min, max, mean, standard deviation) over logging interval.
- Battery backed RAM for intermediate data storage and processing. (Minimum 128 KB) Stored data at 12 minute intervals more than 2 years if not downloaded.

d) Power supply:

- Each data logger shall be provided with an internal source that would prevent equipment shutdown or loss of data when the main battery is either disconnected for a short period or exchanged. (± 12 minutes)
- Power for all the sensors will be derived from the internal main battery via the data logger for more than 2 years at an interval of 12 minutes.
- The logger must have low power consumption on standby mode.
- The user replaceable internal battery must have a battery life of at least 5 years at an hourly logging interval under the specified operating temperatures.
- Optional: high capacity external lithium battery pack, user replaceable.
- The logger should be fitted with an external power input connector where external DC voltage can be supplied if required;
- The data logger must be reverse polarity protected.
- The logger must be programmable to log at a fixed rate or multiple logging intervals from 1 minute to 12 hours.
- High accuracy battery monitoring optimising maintenance and asset management programmes.

e) Input functions and interfacing:

- Programmable Input range:
 - 0 - 100m (0 - 10 bar); or
 - 0 - 200m (0 - 20 bar):
- Resolution:
 - $\pm 0.5\%$ or $\pm 0.1\%$.
- In order to conserve power, the data logger shall control the power supply to each sensor. Sensors shall be switched on in sequence and readings taken under processor control. Sufficient warm-up and stabilization time for sensors must be controlled by the logger.
- During non-measurement periods power supply to the sensors and signal converter units shall be interrupted for all the analogue channels.
- Full calibration procedures shall be provided for each sensor / signal conditioning unit.

- Input connectors for sensors shall be clearly labelled, shall be polarized to prevent mismatching of connectors and shall be configured so that no damage can occur if a unit is accidentally or intentionally connected to the wrong input channel. Each connector shall make provision for all the necessary signal lines, earth, 0V and 12V (switched) supplied lines.
- The data logger will feature an optional integral pressure sensor for connection to the water pressure.

f) Enclosure and Housing:



- **Only** compact data loggers will be accepted, therefore all electronic components, wiring, etc., will be fixed / mounted inside the logger housing. **No** logger will be considered should the operator need to open the housing to access the keypad, LC Display, Connectors, etc.
- The data logger shall be enclosed in wall mounted / standing enclosures, for installation in a recorder hut.
- The data logger shall be designed to operate without degradation under dusty or condensing conditions experienced at sites.
- The housing shall be manufactured of corrosion resistant material.
- The data logger / communication unit housing shall not exceed the following dimensions:
 - Height: less than 150 mm;
 - Width: less than 150 mm;
 - Depth: less than 150 mm.
- The data logger will feature a local full duplex serial communication port for programming the data logger, and for manual downloading of data. The data-logger local communication port should operate at an asynchronous data rate of between 1200 to 38400 Bps.
- Proven bidirectional communication with automatic gap filling ensuring high level data reliability and supporting remote product configuration

4.2.4 Transmission:

4.2.4.1 GSM Modem



- The data logger shall incorporate a built-in GSM Modem for the purpose of transmitting and receiving data to and from the network.
- The GSM modem shall be a scalable machine to machine (M2M) solution reducing user operating and capital costs.
- The GSM modem shall be easily set-up using innovative optional Wi-Fi communication interface.

4.2.4.2 GSM Modem Frequency Band

- The GSM Modem shall be dual band and should be capable of operating at frequencies of 900 MHz/1800 MHz or 850 Hz/1900 MHz.



4.2.4.3 GSM Modem Antenna:

- The GSM antenna shall be integral to the data logger.



- An external SMA connector must be available for attaching an optional external GSM antenna to the logger to support 2G or 3G frequencies.

4.2.4.4 SIM Card Compatibility and Replacement: ☐

- The data logger will permit the fitting and replacement of the SIM card by the user. It should support all current forms of SIM cards in common use by GSM operators.

4.2.4.5 Signal Strength Measurement: ☐

- To carry out an installation, the installer will be required to measure the signal strength from the various operators with the product mounted in-situ. In the case of underground locations, this will involve placing the data logger in its anticipated position and measure signal strength with the chamber covers replaced, or in anticipated position in a basement.
- The data logger should therefore have a facility to carry out the unattended recording of signal strength. Subsequent downloading and analysis of the signal strength data then reveals the adequacy of the mounting position, the choice of provider and so on.

4.2.4.6 Choice of Operator: ☐

- The data logger will operate with any of the GSM operators' networks.

4.2.4.7 Transmission of Data: ☐

- Remote set-up compatibility monitoring and control through locally deployed PMAC software in use by the Hydrology Section for the last 10 years
- The data logger will be programmed to initiate data transmission hourly, daily, weekly or monthly at a user selected time. The logger will assemble the data to be transmitted in the form of packets of suitable length and format to be transmitted as a number of SMS's.
- Data to be transmitted will be any data, which has not been previously sent, or, at the request of the data centre any data recorded from a particular date and time.
- Advanced channel profile and threshold alarms.
- High frequency pressure transient detection critical to extending asset life and network modelling.

4.3 Sensor for water level measurement: pressure transducer: piezo resistive sensor (stainless steel) with 4-20mA output.

4.3.1 Application

- a) The submersible pressure transducer will be used for hydrostatic water level measurement and will be measuring pressure using a vented cable. ☐
- b) Pressure transducers must be capable of measuring water levels from 0 - 100 m, the range of each transducer being determined by the Department and pre-set in the factory. Typical ranges could be: 0 - 1 m; 0 - 2.5 m; 0 - 5 m; 0 - 10 m; 0 - 20 m, 0 - 30 m and >40 m on request. ☐
- c) The pressure transducers must have a high reliability and ensure a large range of application for pressure measurement in all fields of water level measurement. ☐

4.3.2 Design and Technical Details:

- a) Pressure Transducer housing: ☐
 - The housing must be in an all-sealed enclosure and the pressure port must be vented to the atmosphere using a vented cable.
 - The transducer housing must be robust, corrosion-resistant, insensitive to impact and vibration and watertight up to at least 70 m of water column. (>70 m on request).
 - The opening to the sensor must be protected by a removable threaded cap to allow for maintenance.
 - The transducer housing shall preferably not exceed the following dimensions and weight:
 - Length: 500 mm
 - Diameter: 50 mm
 - Weight: 1 kg
 -
 - The transducer housing can be fitted with a watertight plug for connection to the transducer cable.
- b) Pressure Transducer sensor: ☐
 - The submersible pressure transducer sensor must be based on a fully welded piezo resistive stainless steel pressure sensor element.
 - The measuring cell must be chemically and thermally resistant.
 - The pressure sensor must have a compensated operating temperature range of -5°C to +70°C.
 - The sensor should be calibrated, temperature compensated and provide amplified analogue output signals for 4-20mA output.
 - The sensor should have a supply voltage of between 9 to 32V and must have reverse polarity protection.
 - The sensor must have a response time of maximum 35 ms with a power consumption not exceeding 250mW. Typical sensor warm-up time must not

exceed 2 seconds.

- The sensor proof pressure must be two times the rated pressure range. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
- The pressure sensor must have surge immunity according to EN 61000-4-5 for current output devices with cable lengths longer than 10m.

c) Measuring Accuracy of the Pressure Transducer Sensor:

- The sensor's Non-linearity (Best Straight Line fit), hysteresis (maximum output difference at any point within the operating pressure range for increasing and decreasing pressure) and repeatability must be 0.1 % FSO (Full Scale).

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d) Vented transducer cable:

- The vented cable is factory fitted to the submersible pressure transducer housing and the length of cable for each submersible pressure transducer are being determined by the Department during procurement.
- The pressure transducer and transducer cable shall be designed to function satisfactorily with a cable length of up to 250 m.
- Flexible with Polyurethane jacketing material for corrosive media and maximum outer diameter 12 mm.
- Double sheathing with interposed tinned copper- braiding shielding with polyester with polyester film to cover the vented tube and all connectors.
- There must be filler between the conductors and vent tube and all conductors must be of tin copper.
- As the transducer cable shall be used as the carrying rope, it shall preferably feature, for longitudinal stability, an internal kevlar core assembly, or equivalent.
- A polyamide pressure-compensation capillary tube for measuring the reference pressure, with an inside diameter of preferably 3 mm, but not less than 1,0 mm.
- End of cable connected by terminal box with hydrophobic filters and exchangeable humidity absorber.
- A fixing clamp for exact positioning of the pressure probe in a stilling well or tube must be available, manufactured of non-corrosive material.

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4.4 Sensor for Weather Measurement: Rain gauge, tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer:

4.4.1 Application:

- a) The tipping bucket rain gauge is recognised as the standard for measuring rainfall and other precipitation in remote and unattended locations.
- b) It has an integrated syphon mechanism delivers high level accuracy.

4.4.2 Design and technical details:

- a) Unit should consist of collector funnel and integrated siphon control mechanism, an outer enclosure with quick release fasteners and base which houses the tipping bucket mechanism.
- b) The catchment enclosure must be manufactured from powder coated aluminium and the catchment base from UV-resistant ASA Polymer.
- c) Operating temperature range to be at least between 4°C to +70°C,
- d) Depending on the needs, the size of the opening should be 200 mm diameter or smaller.
- e) The minimum depth of rainfall to be measured will be either 0.5 mm, 0.2 mm or 0.1 mm.
- f) The rain gauge should be able to measure an intensity of at least 0-400 mm/h.
- g) The accuracy of the unit shall be better than 7% for 150 – 200mm/hr.
- h) An optional data logger can be offered with a download option via laptop and data transmission unit using a RS 232 interface or with an impulse output, for the data loggers as specified in this document.
- i) Spares and accessories i.e. a warm-up device must be offered as an optional extra.
- j) A calibration certificate shall be produced by the manufacturer with delivery of the item.

4.5 Single channel data logger with integrated sensor: pressure transducer (vented);

4.5.1 Single channel data logger:

a) Data Processing:

- Only intelligent data loggers, equipped with a microprocessor will be considered.
- The data logger shall be equipped with a CPU watchdog circuit that will automatically restart the system in case of a severe electrical or electromagnetic disturbance.

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b) Real time clock:

- The data loggers shall be equipped with battery backed hardware real time clock system.
- The real time clock system shall provide time (24-hour system) and date information and shall make provision for leap years.
- The accuracy and stability of the real time clock shall be better than ± 30 seconds per month, operating under the environmental conditions listed above in SECTION 3: STANDARD SPECIFICATIONS.

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c) Memory:

The data loggers shall be provided with the following types of memory systems:

- Non-volatile memory for system and station parameters and user defined variables.
- Battery backed RAM for intermediate data storage and processing. (Minimum 128 KB) Stored data at 12 minutes' interval more than 2 years if not downloaded.

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d) Power supply:

- Each data logger shall be provided with an internal source that would prevent equipment shutdown or loss of data when the main battery is either disconnected for a short period or exchanged. (± 12 minutes)
- Power for all the sensors will be derived from the internal main battery via the data logger for more than 2 years at an interval of 12 minutes.
- The logger must have low power consumption on standby mode.
- Loggers with non-standard batteries that cannot be replaced by the operator must have a battery life of at least 5 years at an hourly logging interval under the specified operating temperatures.
- Loggers with batteries that can be replaced by the operator must have a battery life of at least 6 months at an hourly logging interval under the specified operating temperatures.
- The data logger must be reverse polarity protected.
- The logger must be programmable to log at a fixed rate or multiple logging intervals from 1 minute to 12 hours.

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e) Input functions and interfacing:

- The analogue input signals shall be measured to an overall accuracy of better than 0.5 to 0.1%. The input circuits shall be so designed that no errors will be

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introduced by ground loops.

- In order to conserve power, the data logger shall control the power supply to each sensor. Sensors shall be switched on in sequence and readings taken under processor control. Sufficient warm-up and stabilization time for sensors must be controlled by the logger.
- During non-measurement periods power supply to the sensors and signal converter units shall be interrupted for all the analogue channels.
- Full calibration procedures shall be provided for each sensor / signal conditioning unit.
- Input connectors for sensors shall be clearly labelled, shall be polarized to prevent mismatching of connectors and shall be configured so that no damage can occur if a unit is accidentally or intentionally connected to the wrong input channel. Each connector shall make provision for all the necessary signal lines, earth, 0V and 12V (switched) supplied lines.
- The data logger will feature an optional integral pressure sensor for connection to the water pressure.

f) Enclosure and Housing:

- **Only** compact data loggers will be accepted, therefore all electronic components, wiring, etc., will be fixed / mounted inside the logger housing. **No** logger will be considered should the operator need to open the housing to access the keypad, LC Display, Connectors, etc.
- The data logger shall be enclosed in wall mounted / standing enclosures, for installation in a recorder hut.
- The housing shall be manufactured of corrosion resistant material.
- The data logger / communication unit housing shall not exceed the following dimensions:
 - Height: less than 600 mm;
 - Width: less than 150 mm;
 - Depth: less than 150 mm.

g) Internal Software Requirements:

- All software packages shall be written and structured in a high level programming language. To conserve memory space, and thus power required, the use of a compiled program is recommended.
- The data logger operating software shall be located in ROM (EEPROM) and the Bidder shall be responsible for the provision of all the software required for the data logger at no additional cost.
- The data logger SOFTWARE shall allow the equipment to operate in a completely unattended mode and all reasonable precautions shall be taken in the structuring of the error trapping routines to prevent system hang-up.
- In order to conserve power, the data logger shall control the power supply to each sensor. Sensors shall be switched on in sequence and readings taken under processor control. The logger must control sufficient warm-up and stabilisation time for sensors.
- During non-measurement periods power supply to the sensors and signal converter units shall be interrupted for all the analogue channels.

h) Data storage:

- Data records shall contain the following information:
 - ID no, Sensor/Channel no, Time/Date and measured value.
 - The measured value shall be given in engineering units.
- Data storage shall be done on a circulating storage system, first in - first out.
- The memory contents must be retained for two years in the case of a power supply breakdown.



i) Data display:

- All conversation between the data logger and the operator shall be done via the display-unit or laptop, tablet or smart device.
- When connecting to the data logger, the following information should be displayed:
 - Measured values, Date, Time, Battery status.
- A time-out shall be provided, so that the display will go into a sleeping mode if no keyboard activity is detected for a period.
- The data logger display will indicate when it is busy with data transfer.



j) Surge Protection (Accessories):

- The Bidder shall make provision for and bid separately for surge protection equipment on all system input/output circuits and power supply input (dc, mains) circuits.
- The following equipment shall be included as an absolute minimum requirement:
 - On all analog /digital input and output circuits – DEHN BLITZDUCTORS TYPE LZ or equivalent with appropriate voltage ratings.
 - On all mains power supply circuits - DEHN type VA-280 surge arrestors or equivalent.
 - The Department may allow the use of alternative types of surge arrestors, provided that equivalent or superior protection levels will be achieved. SABS and/or CSIR test reports to substantiate claims shall be provided for the alternative offers.
 - It is not anticipated that the stated equipment will be used on its own, necessarily, provide the required level of protection and the Bidder shall implement additional measures deemed necessary to achieve the required protection level.



k) Data acquisition:

- The data logger shall operate with a fixed interval logging sequences.
- The operating system should allow for various measurement intervals. The operators shall however be able to select a fixed interval for sample and storing of the data:
 - Minimum sampling time of 60 seconds.



4.5.2 Pressure Transducer:

4.5.2.1 Application:



- a) The submersible pressure transducer will be used for hydrostatic water level measurement and will be measuring pressure using a vented cable.
- b) Pressure transducers must be capable of measuring water levels from 0 - 100 m, the range of each transducer being determined by the Department and pre-set in the factory. Typical ranges could be: 0 - 1 m; 0 - 2.5 m; 0 - 5 m; 0 - 10 m; 0 - 20 m, 0 - 30 m and >40 m on request.
- c) The pressure transducers must have a high reliability and ensure a large range of application for pressure measurement in all fields of water level measurement.

4.5.2.2 Design and technical details:

- a) Pressure Transducer housing:
 - The housing must be in an all-sealed enclosure and the pressure port must be vented to the atmosphere using a vented cable.
 - The transducer housing must be robust, corrosion-resistant, insensitive to impact and vibration and watertight up to at least 70 m of water column. (>70 m on request).
 - The opening to the sensor must be protected by a removable threaded cap to allow for maintenance.
 - The transducer housing shall preferably not exceed the following dimensions and weight:
 - Length: 500 mm
 - Diameter: 50 mm
 - Weight: 1 kg
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 - The transducer housing can be fitted with a watertight plug for connection to the transducer cable.
- b) Pressure sensor:
 - The submersible pressure transducer sensor must be based on a piezo resistive ceramic or fully welded piezo resistive stainless steel pressure sensor element.
 - The measuring cell must be chemically and thermally resistant.
 - The pressure sensor must have a compensated operating temperature range of -5°C to +70°C.
 - The sensor should be calibrated, temperature compensated and provide amplified analogue output signals for 4-20mA output.
 - The sensor should have a supply voltage of between 9 to 32V and must have reverse polarity protection.
 - The sensor must have a response time of maximum 35ms with a power consumption not exceeding 250mW. Typical sensor warm-up time must not exceed 2 seconds.
 - The sensor proof pressure must be two times the rated pressure range. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
 - The pressure sensor must have surge immunity according to EN 61000-4-5 for current output devices with cable lengths longer than 10m.
- c) Measuring Accuracy of the Pressure Transducer Sensor:

- The sensor's Non-linearity (Best Straight Line fit), hysteresis (maximum output difference at any point within the operating pressure range for increasing and decreasing pressure) and repeatability must be 0.1 % FSO (Full Scale).
- d) Vented Transducer cable:
- The vented cable is factory fitted to the submersible pressure transducer housing and the length of cable for each submersible pressure transducer are being determined by the Department during procurement.
 - The pressure transducer and transducer cable shall be designed to function satisfactorily with a cable length of up to 250 m.
 - Flexible with Polyurethane jacketing material for corrosive media and maximum outer diameter 12 mm.
 - Double sheathing with interposed tinned copper- braiding shielding with polyester with polyester film to cover the vented tube and all connectors.
 - There must be filler between the conductors and vent tube and all conductors must be of tin copper.
 - As the transducer cable shall be used as the carrying rope, it shall preferably feature, for longitudinal stability, an internal Kevlar core assembly, or equivalent.
 - A polyamide pressure-compensation capillary tube for measuring the reference pressure, with an inside diameter of preferably 3 mm, but not less than 1,0 mm.
 - End of cable connected by terminal box with hydrophobic filters and exchangeable humidity absorber.
 - A fixing clamp for exact positioning of the pressure probe in a stilling well or tube must be available, manufactured of non-corrosive material.

Table 1: Description of quantities required

Item No.	Item Description	Quantity
1	Acoustic Doppler Current Profiler	1
2	Multi-channel data logger for external sensors: 4-20 mA (vented pressure transducer) and digital pulse (rainfall); submersible with internal battery and internal GSM modem	43
3	Sensor for water level measurement: pressure transducer: piezo resistive sensor (stainless steel) with 4-20mA output, range and cable length will be supplied additionally	43
4	Sensor for Weather Measurement: Rain gauge, 0,2mm tipping bucket with integrated syphon mechanism (high levels of accuracy), for low rainfall events, powder coated aluminium/ ASA Polymer	10
5	Single channel data logger with integrated sensor: pressure transducer (vented) , range and cable length will be supplied additionally	80
6	Vented Transducer Cable (Total meters required)	5360

I understand the specifications and conditions of the contract and certify that the information supplied is true and correct.

SIGNATURE OF BIDDER