4.4.12.2/22/19 (1)

COMPULSORY BID INFORMATION MEETING

PLEASE TAKE NOTE THAT NO LATE BIDDER(S) WILL BE ADMITTED.

PLACE

DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT MOTHIBISTAD OFFICE, NORTHERN CAPE

TIME

10:00 AM

DATE

31 OCTOBER 2019

ENQUIRIES

General Enquiries: Ms NN Zwane

TEL. NO.: (012) 319 6625

Technical Enquiries: Ms. R.F. Phuthi

TEL NO: 012 319 5855

FAILURE TO ATTEND THE COMPULSORY BID INFORMATION MEETING WILL RESULT IN THE BIDDER'S BID TO BE REJECTED.

PART A INVITATION TO BID

YOU ARE HEREI	BY INVITED TO BID FOR	R REQUIRE	MENTS OF THE	NAME O	F DEPA	RTMENT/ PUB	ICF	NTITY	98
BID NUMBER:	4.4.12.2/22/19 (1)	CLOS	SING DATE:		VEMBE			S TIME: 11:00 AM	
	APPOINTMENT O	F A SER	VICE PROVID	ER FC	R TH	E EQUIPPIN	NG (OF BOREHOLES IN TH	HE
	NORTHERN CAPE	PROVIN	ICE, FOR THE	E DEPA	RTME	NT OF AGE	RICU	ILTURE, FORESTRY AN	۷E
DESCRIPTION	FISHERIES.								
THE SUCCESSFI	UL BIDDER WILL BE RE	EQUIRED TO	O FILL IN AND SI	GN A WR	RITTEN (CONTRACT FO	RM ((SBD7).	
	DOCUMENTS MAY BE	DEPOSITED) IN THE BID BO	<					
	TREET ADDRESS)	FOTOV AND	S EIGHEDIES AS						
	F AGRICULTURE, FOR) FISHERIES, AG	RICULTU	RE PLA	CE MAIN ENT	RAN	CE	_
	PTS OFFICE ROOM NO:								
20 STEVE BINO	ROAD ARCADIA PRETO	DRIA				***			
SUPPLIER INFOR	RMATION			V-10-10-10-10-10-10-10-10-10-10-10-10-10-					
NAME OF BIDDE									
POSTAL ADDRES				-					_
STREET ADDRES						-			
TELEPHONE NUM		CODE		***		NUMBER	Т		
CELLPHONE NUM		CODE				NUMBER			_
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E-MAIL ADDRESS		CODE				NUMBER			
VAT REGISTRATI									_
VAI REGISTRATI	ON NOWBER				T				
D DDEE CTATUC	LEVEL VEDIEIOATION	TCS PIN:			OR	CSD No:	_		
CERTIFICATE	LEVEL VERIFICATION	Yes			100000000000000000000000000000000000000	E STATUS SWORN	Ш	Yes	
[TICK APPLICABL	E BOX]	□No			AFFID		П	No	
IF YES, WHO WAS ISSUED BY?	S THE CERTIFICATE		455	***************************************	1,,			110	
AN ACCOUNTING	0551055 40		AN ACCOUNTIN	NG OFFIC	CER AS	CONTEMPLAT	ED II	N THE CLOSE CORPORATION	N
AN ACCOUNTING CONTEMPLATED			ACT (CCA) A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN						
	CT (CCA) AND NAME		ACCREDITATIO	N SYSTE	ENCT M (SAN	ACCREDITEL IAS)) B	Y THE SOUTH AFRICAL	N
	IN THE TICK BOX		A REGISTERED						
			NAME:				,		
[A B-BBEE STAT ORDER TO QUA	TUS LEVEL VERIFICA LIFY FOR PREFEREI	TION CER	TIFICATE/SWO	RN AFFI	DAVIT(FOR EMEs&	QSE	s) MUST BE SUBMITTED II	N
		IOL I OIN	OT ON B-BBLL	-]	ARE	OU A FOREIG	iN		
ARE YOU THE AC		Yes	□ No	0	1	D SUPPLIER F		☐Yes ☐N	0
	E IN SOUTH AFRICA /SERVICES /WORKS				1	GOODS			
OFFERED?	TOLITY TOLO WORKS	IIF YES E	NCLOSE PROOF	1	OFFE	ICES /WORKS	3	[IF YES ANSWER PART B:3 BELOW]	}
		Į ir TEO Ei	VOLUGET NOOF		OFFE	KED!		BELOW	
SIGNATURE OF B	IDDER				DATE				_
	R WHICH THIS BID IS				DAIL				_
	roof of authority to								
sign this bid; e.g. i directors, etc.)	resolution of								
anectors, etc.)					ΤΟΤΔ	L BID PRICE (A	111		_
	OF ITEMS OFFERED				INCLU		~LL		
	URE ENQUIRIES MAY						IYAN	BE DIRECTED TO:	
DEPARTMENT/ PU		AGRICULT		CONTA			_	Ms. R.F. Phuthi	
CONTACT PERSON TELEPHONE NUMBER TELEPHONE NUMB		Ms. NN Zw 012 319 66				UMBER	(012 309 5855	
-MAIL ADDRESS			zw@daff.gov.za	FACSIN E-MAIL				MahlatseP@daff.gov.za	
				_ 1VI/\(\)	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			namatoer (waan.yov.za	_

PART B TERMS AND CONDITIONS FOR BIDDING

	BID SUBMISSION:	
1.1.	BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BI CONSIDERATION.	DS WILL NOT BE ACCEPTED FOR
1.2.	ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED-(NOT TO BE RE-TYPED	O) OR ONLINE
1.3.	BIDDERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MAND BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMP INFORMATION FOR VERIFICATION PURPOSES). B-BBEE CERTIFICATE OR SWORN AFFIDAVIT TO BIDDING INSTITUTION.	PLIANCE STATUS; AND BANKING
1.4.	WHERE A BIDDER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMED DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT DOCUMENTATION. B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMED	BE SUBMITTED WITH THE BID
1.5.	THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.	0 AND THE PREFERENTIAL , IF APPLICABLE, ANY OTHER
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) ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.	ISSUED BY SARS TO ENABLE THE
2.3	APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. IN TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WW	N ORDER TO USE THIS PROVISION, W.SARS.GOV.ZA.
2.4	BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID.	
2.5	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH P PROOF OF TCS / PIN / CSD NUMBER.	ARTY MUST SUBMIT A SEPARATE
2.6	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER IMUST BE PROVIDED.	DATABASE (CSD), A CSD NUMBER
3.	QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS	
3.1.	IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	YES NO
3.2.	DOES THE BIDDER HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
3.3.	DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	YES NO
3.4.	DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
IF TH	IE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A 'PLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NO	TAX COMPLIANCE STATUS / TAX OT REGISTER AS PER 2.3 ABOVE.

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

PRICING SCHEDULE -FIRM PRICES

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

NAME OF	SERVICE PROVIDER:	BID NO.: 4.4.12.2/22/19 (1)
CLOSING	TIME 11:00 ON 21 NOVEMBER 2019	
OFFER TO	D BE VALID FOR 90 DAYS (UNTIL 21 FEBRUARY 2020) FROM THE CLOSING DA	TE OF BID.
ITEM NO	DESCRIPTION	BID PRICE IN RSA CURRENCY INCLUSIVE OF <u>VALUE ADDED TAX</u>
1.	Bid Description: Appointment of a service provider for Northern Cape Province, for the Department of Agricult	
2.	Bidders are required to indicate a total ceiling price of 13 bot to be equipped including all expenses for the project	reholes together with their reservoirs
	Borehole 1: Thamoyance Total price including vat and all cost	R
	Borehole 2: Maketlele Total price including vat and all cost	R
	Borehole 3: Cardington Total price including vat and all cost	R
	Borehole 4: Maruping Total price including vat and all cost	R
	Borehole 5: Metsimantsi Wyk 7 Total price including vat and all	cost R
	Borehole 6: Metsimantsi Wyk 2 Total price including vat and all	cost R
	Borehole 7: Metsimantshi Wyk 4 Total price including vat and	all cost R
	Borehole 8: Longhurst Total price including vat and all cost	R
	Borehole 9: Wingate Total price including vat and all cost	R
	Borehole 10: Dithakong (Lokaleng) Total price including vat a	and all cost R
	Borehole11: Dikhing Total price including vat and all cost R	
	Borehole 12: Gasehunelo Wyk 9 Total price including vat and al	I cost R
	Borehole 13: Gamammebe Total price including vat and all cost	R
•	TOTAL PRICE FOR ALL THIRTEEN (13) BOREHOLES: R PRICE (INCLUSIVE OF ALL COSTS AND VAT) FIRM FOR A PE	/TOTAL ERIOD OF SIX (6) MONTHS
	Period required for commencement of project	
	Does the offer comply with the specification(s)	Yes / No
	If not to specification, indicate deviation(s)	

Bid No.: SCM 4.4.12.2/22/19 (1)

Name of Bidder:	
Period required for delivery	*Delivery: Firm / Not Firm
Did you submit a Valid Certificate B-BBEE/SWORN AFFIDAVIT ?	
B-BBEE Status Level of Contribution	=
(A maximum of 10 points)	

Technical enquiries can be directed to: Ms R.F. Phuthi

Tel: 012 309 5855

General enquiries Nokuthula Zwane

Tel. no. 012 319 6625 Email: NokuthulaZW@daff.gov.za

SBD 4

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 an advertised competitive bid, a limited bid, a proposal or written price quotation). In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons employed by the state, or to persons connected with or related to them, it is required that the bidder or his/her authorised representative declare his/her position in relation to the evaluating/adjudicating authority where-
 - the bidder is employed by the state; and/or
 - the legal person on whose behalf the bidding document is signed, has a relationship with persons/a person who are/is involved in the evaluation and or adjudication of the bid(s), or where it is known that such a relationship exists between the person or persons for or on whose behalf the declarant acts and persons who are involved with the evaluation and or adjudication of the bid.

2.	In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.
2.1	Full Name of bidder or his or her representative:
2.2	Identity Number:
2.3	Position occupied in the Company (director, trustee, shareholder², member):
2.4	Registration number of company, enterprise, close corporation, partnership agreement or trust:
2.5	Tax Reference Number:
2.6	VAT Registration Number:
2.6.1	The names of all directors / trustees / shareholders / members, their individual identity numbers, tax reference numbers and, if applicable, employee / PERSAL numbers must be indicated in paragraph 3 below.
otate means	 (a) any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance (b) any municipality or municipal entity;

provincial legislature;

Parliament.

national Assembly or the national Council of provinces; or

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.

	Are you or any person connected with the bidder presently employed by the state?	YES / NO
2	.7.1 If so, furnish the following particulars:	
	Name of person / director / trustee / shareholder/ member: Name of state institution at which you or the person connected to the bidder is employed:	
	Position occupied in the state institution:	
	Any other particulars:	
2.7	.2 If you are presently employed by the state, did you obtain the appropriate authority to undertake remunerative work outside employment in the public sector?	YES / NO
2.7.	2.1 If yes, did you attach proof of such authority to the bid document?	YES / NO
	(Note: Failure to submit proof of such authority, where applicable, may result in the disqualification of the bid.	
2.7.2	2.2 If no, furnish reasons for non-submission of such proof:	
2.8	Did you or your spouse, or any of the company's directors / trustees / shareholders / members or their spouses conduct business with the state in the previous twelve months?	YES / NO
2.8.1	If so, furnish particulars:	
2.9	Do you, or any person connected with the bidder, have any relationship (family, friend, other) with a person employed by the state and who may be involved with	YES / NO
2.9.1	the evaluation and or adjudication of this bid? If so, furnish particulars.	

	()			
2	2.10 Are you, or any person co aware of any relationsh any other bidder and ar who may be involved w of this bid?	ip (family, friend, other) between	S/NO
2	.10.1If so, furnish particulars.			
	11 Do you or any of the directo of the company have any in whether or not they are bidd	rs / trustees / sharehol	ders / members YES/ ted companies	NO
۷. ا	11.1If so, furnish particulars:			
3	Full details of directors / trus		reholders.	
	Full Name	Identity Number	Personal Income Tax Reference Number	THIDTOY.

Full Name	Identity Number	Personal Income Tax Reference Number	 Employee

I, THE UNDERSIGNED (NAME).... CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 2 and 3 ABOVE IS CORRECT. I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE. Signature Date Position Name of bidder

November 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
 - the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2

- 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
- b) Either the 80/20 or 90/10 preference point system will be applicable to this tender (delete whichever is not applicable for this tender).
- 1.3 Points for this bid shall be awarded for:
 - (a) Price; and
 - (b) B-BBEE Status Level of Contributor.
- 1.4 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

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

2. **DEFINITIONS**

- (a) "B-BBEE" means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) "B-BBEE status level of contributor" means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) "bid" means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) "Broad-Based Black Economic Empowerment Act" means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) "EME" means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) "functionality" means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) "prices" includes all applicable taxes less all unconditional discounts;
- (h) "proof of B-BBEE status level of contributor" means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- "QSE" means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) "rand value" means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3. POINTS AWARDED FOR PRICE

3.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right)$$
 or $Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$

Where

Ps = Points scored for price of bid under consideration

Pt = Price of bid under consideration

Pmin = 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		BID	DECL	ARAT	ION
--------------------	--	-----	------	------	-----

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	
	1110	

7.1.1 If yes, indicate:

i)	What subcontract	percentage ted	of	the	contract	will	be
ii)	The	name		of	the		sub-
III)	The contractor	B-BBEE	status	level	of	the	sub-

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:

EME	QSE
V	V
	EIME √

Black people with disabilities	
Black ople living in rural or underdeveloped areas or townshins	
Cooperative Owned by plack people	
Black people who are military veterans	
Any EME OR	
Any QSE	

8.	DECLARATION WITH REGARD TO COMPANY/FIRM
8.1	Name
10.	company/firm:of
8.2	VAT
	number:registration
8.3	Company
	number:registration
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-BBE 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;
	 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;
 - 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 audi alteram partem (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution.

WITNESSES		
1	S.	IGNATURE(S) OF BIDDERS(S)
2	DATE: ADDRESS	

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- This Standard Bidding Document must form part of all bids invited. 1.
- It serves as a declaration to be used by institutions in ensuring that when goods 2. and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- The bid of any bidder may be disregarded if that bidder, or any of its directors 3.
 - abused the institution's supply chain management system; a. b.
 - committed fraud or any other improper conduct in relation to such system;
 - failed to perform on any previous contract. C.
- In order to give effect to the above, the following questionnaire must be 4. completed and submitted with the bid.

1 Question		
Is the bidder or any of its directors listed on the National Treasury's database 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 National Treasury after the audi alteram partem rule was applied.)	Yes Yes	N
If so, furnish particulars:		
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)? To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012)326-5445.	Yes	No
years?	es	No
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?	es N	0
	Is the bidder or any of its directors listed on the National Treasury's database 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 National Treasury after the audi alteram partem rule was applied.) If so, furnish particulars: 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)? To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or number (012)326-5445. If so, furnish particulars: 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 life, furnish particulars: Was any contract between the bidder.	Is the bidder or any of its directors listed on the National Treasury's database 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 National Treasury after the audi alteram rule was applied.) If so, furnish particulars: 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 To access this Register enter the National Treasury's website, submit your written request for a hard copy of the Register to facsimile lifeso, furnish particulars: Was the bidder or any of its directors convicted by a court of law (including a court years? Was the bidder or any of its directors convicted by a court of law (including a court years?

CERTIFICATION

Position	Name of Bidder
Signature	Date
I ACCEPT THAT, IN ADDITION TO CANCEL BE TAKEN AGAINST ME SHOULD THIS DEC	LATION OF A CONTRACT, ACTION MAY LARATION PROVE TO BE FALSE.
I, THE UNDERSIGNED (FULL NAME) CERTIFY THAT THE INFORMATION FURNI TRUE AND CORRECT.	SHED ON THIS DECLARATION FORM IS

SBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) must form part of all bids¹ invited.
- 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.
- 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.
 - 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.
- 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.
- 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:
certify, on behalf of:
(Name of Bidder) 1. I have read and Lundorston different and the second

- 1. I have read and I understand the contents of this Certificate;
- 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;
- 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; 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:
 - prices:
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - the intention or decision to submit or not to submit, a bid; (d)
 - the submission of a bid which does not meet the specifications and (e) conditions of the bid; or
 - bidding with the intention not to win the bid. (f)
- 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
- 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

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



Bid invitation

BID NUMBER:

4.4.12.2/22/19 (1)

SUBJECT:

THE APPOINTMENT OF A SERVICE PROVIDER FOR EQUIPING OF BOREHOLES IN THE NORTHERN CAPE PROVINCE FOR THE DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES.

1. GENERAL BID CONDITIONS

- Bidders who failed to complete the bid terms of reference/specification in all aspects will auto-1.1 matically be disqualified.
- The bid must conform to the minimum requirements, as set out in this document, or it must be 1.2 stated clearly how it deviates from these requirements and why. Offers exceeding the minimum requirements of the terms of reference/specification are acceptable.
- 1.3 Bidders must complete all the necessary bid forms and undertakings, which normally or otherwise accompany a government bid. The following forms and terms of reference/specification must be completed and submitted together with the bidder's response to this bid:

SBD 1 Invitation to bid

SBD 4 = Declaration of interest

SBD 6.1 =Preference points claim form

SBD 8 = Declaration of bidder's past Supply Chain Management (SCM) practices

SBD 9 Certificate of Independent Bid Determination

- The recommended bidder(s) may be requested to complete and sign all the Standard Bidding 1.4 Documentation (SBD) above within five (5) working days from date of request. Failure to comply will result in disqualification of the bid.
- The official forms as per paragraph 1.3 above and the bid terms of reference/specification must 1.5 NOT be retyped. To ensure authenticity of documents, bidders must complete the SBD forms and terms of reference/specification forms by hand, using a pen. Bidders who do not comply with this requirement and retype the bidding documentation will be disqualified.
- 1.6 No bid may be awarded to any bidder whose tax status has not been declared compliant by SARS. The recommended bidder/s that are not tax compliant according to the CSD must resolve their tax matters with SARS within seven (7) working days from date of request. Failure to comply with the aforementioned will result in the bid being disqualified. The Department reserves the right to consider the second bidder who is tax compliant.
- All bidders must ensure that they are registered on the Central Supplier Database (CSD): 1.7 www.csd.gov.za. Bidders are advised to ensure that their banking details are successfully veri-
- The Department will verify the bidder's registration on the CSD. 1.8

- 1.9 The Department will not award any bid to a bidder not registered as a prospective service provider/supplier on the CSD.
- 1.10 The successful bidder will be required to sign a written contract form (SBD 7). This document will be a binding contract between the successful bidder and the Department. No service should be rendered without receipt of an official order issued by the Department. No official order will be issued unless the successful bidder(s) has been successfully registered on the Central Supplier Database of the National Treasury.
- 1.11 This bid is subject to Government Procurement: General Conditions of Contract, which may not be amended.
- 1.11.1 Failure to withdraw, waive and/or renounce the bidder's own bid conditions, when called upon to do so, will invalidate the bid.
- 1.12 During evaluation of the bids, information may be requested in writing from bidders. Replies to such requests must be submitted within five (5) working days or bids may be disregarded.
- 1.13 The Department may **only accept a total ceiling price** for the entire project that must be inclusive of **all** costs (including travel and subsistence expenses). The bidders will not be entitled to claim for travel and subsistence expenses, such items must be included in the bid price.
- 1.14 The Department will give preference to bidders that bid firm prices for the entire duration of the contract in terms of this bid. Non-firm prices (including prices that are subject to rates of exchange variations) may be considered if supporting documentation is submitted. It is mandatory to complete the SBD 3 form (pricing schedule) in full. Should the bidder fail increases will be considered by the Department in cases where firm bid prices have been agreed upon.
- 1.15 The Department will not be held liable for any expenses incurred by bidders in preparing and submitting bids.
- 1.16 The Department reserves the right to appoint more than one bidder, depending on conditions of the bid.
- 1.16.1 The award of the bid may be subjected to price negotiation with the recommended bidders.
- 1.17 The Department hereby chooses the following street address as its domicilium citandi et executandi for the purpose of serving notices and legal documentation:

Street address

Agriculture Place 20 Steve Biko Road ARCADIA Pretoria 0083

- 1.18 In order to qualify for B-BBEE points, bidders are required to submit proof as a B-BBEE Status Level contributor. Proof includes original and valid B-BBEE Status Level Verification Certificates or certified copies thereof and Sworn Affidavits attested by a Commissioner of Oaths together with the bids or price quotations to substantiate the B-BBEE rating claims.
- 1.18.1 Bidders who do not submit proof of B-BBEE Status Level contributor or who are non-compliant contributors to B-BBEE do not qualify for preference points for B-BBEE.
- 1.18.2 If this bid is subject to B-BBEE prequalification criteria, failure to submit the required proof as a B-BBEE contributor will result in automatic disqualification of the bid.

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- 1.19 B-BBEE Status Level Verification Certificates submitted must be issued by the following:
- 1.19.1 Bidders other than EMEs and QSEs Verification agencies accredited by SANAS; or
- 1.19.2 Bidders who qualify as EMEs and QSEs

Sworn affidavit signed by the EME or QSE representative and attested by a Commissioner of Oaths.

- 1.19.3 A trust, consortium or joint venture (including unincorporated consortia and joint ventures) must submit a consolidated B-BBEE Status Level Verification Certificate or Sworn Affidavit.
- 1.19.4 Public entities and tertiary institutions must submit B-BBEE Status Level Verification Certificates together with their bids.
- 1.20 For joint venture to be considered and points allocated accordingly, the following documents are required:
- 1.20.1 Agreement between parties in joint venture;
- 1.20.2 Consolidated B-BBEE certificate; and
- 1.20.3 Both parties must be registered on the Central Supplier Database with a tax compliant status.
- 1.21 Bidder(s) may be requested to submit a valid company registration certificate issued by the Registrar of Companies and copies of the ID document(s) of active director(s).

1.22 Enquiries

echnical enquiries	Ms. R.F. Phuthi	Tel. 012 309 5855
eneral SCM enquiries	Ms. NN Zwane	Tel.012 319 6625

- 1.23 The successful bidder must supply and deliver goods and services to the address as indicated in the bid documentation.
- 1.24 The validity period of this bid must be at least 90 days from the closing date of the bid.

CONFIDENTIALITY

- 2.1 This bid and all information in connection therewith shall be held in strict confidence by bidders and the use of such information shall be limited to the preparation of the bid. Bidders shall undertake to limit the number of copies of this document.
- 2.2 The unauthorised disclosure of any information regarding the Department or its activities to any other organisation or individual is prohibited. The bidders may not disclose any information, documentation or products to other clients without the written approval of the Director-General or the delegated official.
- COPYRIGHT
- 3.1 Copyright of all documentation in relation to this bid belongs to the Department. The successful bidder may not disclose any information, documentation or products to other clients without the written approval of the Director-General or the delegated official.
- PAYMENTS

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4. PAYMENTS

4.1 Payment shall normally be made within 30 days after receipt of an original invoice, subject to satisfactory delivery of the service as outlined in the Terms of Reference/Specification.

NON-COMPLIANCE WITH DELIVERY TERMS

As soon as it becomes known to the bidder that he/she will not be able to perform the services/deliver the goods within the agreed time/or delivery period and/or against the quoted price and/or as specified in the contract, the Department must be given immediate written notice to this effect. The Department reserves the right to implement remedies as provided for in paragraph 22 of the General Conditions of Contract.

6. RETENTION

- On termination of this agreement, the bidder shall on demand, hand over all documentation, information, etc. to the Department without the right of retention.
- No agreement to amend or vary a contract or order or the conditions, stipulations or provisions thereof shall be valid and of any force and effect unless such agreement to amend or vary is entered into in writing and signed by the contracting parties. Any waiver of the requirement of the agreement to amend or vary conditions shall be in writing.

EVALUATION TEAM

The Department will appoint a Bid Evaluation Committee to evaluate the bid submissions. The committee will make recommendations to the Bid Adjudication Committee.

EVALUATION OF BIDS

Bids will be evaluated on the following basis:

8.1 Phase 1: Prequalification criteria

- 8.1.1 The following prequalification criteria will be applicable to this bid:
 - (i) B-BBEE Status Level 1 to 4
- 8.1.2 Bidders that do not meet the pre-qualification criteria stipulated in paragraph 8.1.1 above will be disqualified from further evaluation. Bidders must submit proof of B-BBEE Status Level of Contributor that complies with paragraph 1.18 above (Sworn Affidavits or B-BBEE Status Level Verification Certificates issued by SANAS accredited verification agencies).
- 8.2 Phase 2: Compliance with minimum bid requirements
- 8.2.1 All bids duly lodged will be evaluated to determine compliance with the bid requirements and conditions. Bids with obvious deviations from the bid requirements/conditions and not acceptable to the evaluation committee will be eliminated from the adjudication process, i.e. will not be shortlisted.
- 8.3 Phase 3: Evaluation for price and preference point system
- 8.3.1 Only bidders who met all the minimum requirements in terms of paragraph 8.2.1 above will be brought on a comparative price basis in terms of the applicable preference point system prescribed in the Preferential Procurement Regulations 6 and 7 of 2017 as indicated in the SBD 6.1 form.

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8.4 Phase 4: Awarding of bid

- 8.4.1 The bid will be awarded to the bidder who scores the highest total number of points in terms of the preference point system (Price and B-BBEE points), unless objective criteria in terms of section 2(f) of the Act justify the award of the bid to another bidder.
- 9. LATE BIDS
- 9.1 All completed documentation must be returned to the Department of Agriculture, Forestry and Fisheries before 11:00 am on 21 November 2019. The location of the drop off is: Agriculture Place, Tender Receipt Office, Tender Box, Reception Area, 20 Steve Biko Road, Arcadia.
- 9.2 Bids received late shall not be considered. The bidding box shall be locked at exactly 11:00 am. The closing time will be in accordance with Telkom time (1026).
- 9.3 Bidders are therefore advised to ensure that bids are dispatched allowing sufficient time for any unforeseen events that may delay the delivery of the bid and time to access the premises because of security arrangements when entering the Department's gate.
- COMPULSORY SITE VISIT [IF APPLICABLE]
- 10.1 Bidders not attending a compulsory site visit (if applicable) will automatically be disqualified.
- 10.2 No late arrivals by bidders for a compulsory site visit will be allowed.
- COMPULSORY BRIEFING SESSION [IF APPLICABLE]
- 11.1 Bidders not attending a compulsory briefing session (if applicable) will automatically be disqualified.
- 11.2 No late arrivals by bidders for a compulsory briefing session will be allowed.
- 12. FRAUD AND CORRUPTION

All prospective bidders should take note of the implications of contravening the Prevention and Combating of Corrupt Activities Act, Act No. 12 of 2004 and any other act applicable.

- REJECTION OR CANCELLATION OF BIDS
- 13.1 The Department reserves the right to reject or cancel bids.
- 13.2 Bids may be cancelled for any of the following reasons:
- 13.2.1 If the bidder has committed a proven corrupt or fraudulent act in competing for a particular contract.
- 13.2.2 If the bidder or any of its directors have:
 - Abused the SCM system of any government department.
 - (ii) Failed to perform any previous contract and the proof thereof exists.
 - (iii) Restricted from doing business with the public sector if such a bidder obtained preferences fraudulently or if such bidder failed to perform on a contract based on the specific goals.
 - (iv) If there is proof of fraud or any other improper conduct in relation to such system.
- 13.2.3 Due to changed circumstances, there is no longer a need for the goods or services requested.

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- 13.2.4 Funds are no longer available to cover the total envisaged expenditure.
- 13.2.5 No acceptable bids are received.
- 13.2.6 Due to material irregularities in the bid process.

TERMS OF REFERENCE FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR THE EQUIPPING OF BOREHOLES IN THE NORTHERN CAPE PROVINCE, ADMINISTERED BY THE DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES THROUGH ITS DIRECTORATE: CLIMATE CHANGE AND DISASTER MANAGEMENT

1. INTRODUCTION AND BACKGROUND

Agricultural production is a risky business as it is very sensitive to extreme weather and climate conditions. Due to the frequency of extreme weather and climate events in the country, the agricultural sector has moved from one disaster to another. Some of the impacts were directly related to the extreme weather and climate events i.e. floods, droughts etc. while others were indirectly related i.e. outbreak of some diseases and pests etc. which were reported as the secondary impacts. These disasters were costly for the government and funds utilized for disaster relief and recovery could have been prioritized for other developmental needs in the country.

Disaster Management Act 57 of 2002 puts more emphasis on pre-disaster risk reduction phase where activities aimed at disaster risk avoidance, prevention, mitigation and preparedness are prioritized. The Department of Agriculture, Forestry and Fisheries (DAFF) through among other disaster risk management activities implements an early warning system in support of disaster risk management. This system disseminates monthly National Agro-meteorological Committee (NAC) Advisories and daily extreme weather warnings with suggested strategies aimed at disaster risk reduction, prevention, avoidance, mitigation and preparedness as per the Disaster Management Act (Act No. 57 of 2002). Disaster risk reduction measures suggested in the advisories and warnings were not always implemented by the farming communities due to lack of resources which led to more exposure to natural hazards.

Disaster Risk Prevention and Mitigation Fund is aimed at effective implementation of disaster risk reduction measures as required by the Disaster Management Act 57 of 2002.

2. SCOPE OF SERVICE

The Directorate: Climate Change and Disaster Management wishes to appoint a service provider for the equipping of boreholes on the Disaster Risk Prevention and Mitigation Fund that is administered by the Department of Agriculture, Forestry and Fisheries, Directorate: Climate Change and Disaster Management.

		COMPLY			
3.	CEDVICE DECLUDENTATION	YES	NO	REMARKS	
3.1	A total number of 13 boreholes together with their reservoirs and drinking troughs to be equipped in Northern Cape Province Department of Agriculture, Land Reform and Rural Development for a period of seven months.				
3.2	The service provider must submit a detailed implementation plan together with the bid documents to show how the work will be completed within a period of seven months. The service provider should also submit the cost breakdown per borehole. Failure to submit these documents will lead to the bid to be viewed as invalid and therefore rejected. (See Annexure A for an implementation plan example).		1		
3.3	The successful service provider will be expected to sign the implementation plan/schedule with time frames developed by the Department of Agriculture, Forestry and Fisheries (DAFF) in collaboration with the Provincial Northern Cape Department of Agriculture, Land Reform and Rural Development (NCDLR).				
3.4	The service provider will provide and keep a construction book on site to record all technical instructions by the engineers/ technicians.				
3.5	The service provider will adhere to the inspection schedule in accordance with the agreed plan of phases/stages to be followed in equipping of boreholes.				
3.6	The service provider will only submit an invoice after the equipping of a borehole is complete and working, and monitoring and evaluation conducted by the engineers, DAFF and the provincial official. No payment will be made by DAFF before a site is completed and signed off by the engineers/ technicians.				
3.7 T	The service provider will submit an invoice signed by him/her in line with the payment certificate per completed site.				
3.8	The successful service provider should submit a status report with every signed invoice by him/her and the relevant official from NCDLR. The service provider should				

	further submit the final report and construction book to DAFF when the project has been finalised.	0	
3.9	The retention amount will be 10%. 5% of this retention money will be paid to the service provider following the issuing of the certificate of completion by the engineers. The remaining 5% will be paid 14 days after the end of Defect Liability Period. Defect Liability (Rectification) Period will be 3 months after completion of the last project site.	of e t	
3.10	The successful bidder should provide skills transfer (general		
	maintenance of a windmill, reservoir and drinking troughs) to the project beneficiaries.		
3.11	The service provider is expected to deliver materials and windmills to all borehole sites without additional costs.		
3.12	The bidder should have successfully executed a minimum of three contracts on equipping of boreholes with windmills and or repairing of windmills and construction reservoirs (two contracts of windmills and one of a reservoir). The bidder is expected to submit proof by means of completion letters from where the service was provided.		
	The letters with an official letterhead must be signed and have references i.e. contact persons and telephone numbers must be included. In cases where the letters do not have letterheads they must be signed and accompanied by affidavits from the South African Police Service. Relevant experience should be clearly highlighted. Failure to submit the completion letters will invalidate the bid.		
3.14	Local community members must be prioritised for jobs during the implementation of the project.		
3.15	The service provider is expected to travel to the specified properties to attend site visits at no extra costs to the Department.		
3.16	The service provider must have someone in the company who is able to communicate in the official local languages in case the service provider is unable to.		

3.17	Work must be completed within seven months after re- ceiving the order number and signing of the implementation plan.		
3.18	The Department reserves the right to appoint more than one service provider to render the required service.		
4.	DELIVERABLES		
4.1.	Thirteen (13) boreholes together with their reservoirs and drinking troughs to be equipped/repair in Northern Cape Department of Agriculture, Land Reform and Rural Development (NCDLR) as follows:		
DESCI	RIPTION		
Site es	stablishment:		
•	Office and storage shed X 1		
•	Ablution and latrine facilities X 2		
•	Provide water and power facilities		
Occupa	ational health and safety measures		
•	Cost of health and safety measures required in terms of the Construction Regulations (2003) of the Occupational Health and Safety Act (1)		
-	Compilation and maintenance of a Health and Safety Plan, including Risk Assessments, Safe Work Procedures and Method Statements (1).		
• (Compilation and maintenance of a Health and Safety File 1).		
DDO IE	CTS SPECIFICATIONS		
LVOSE	513 SPECIFICATIONS		

4.1.1. Thamoyanche (S 27° 19' 05. 3"; E 23° 37' 09.7")			
4.1.1.1 Supply and installation of Windmill			
(Includes all equipment, materials, transport and labour re	equired)		
 Install 9 m high windmill tower with a 2.5 m Ø when 			
gearbox, tail brake system, fork rod, bucket rod			
wood rod x 3 meter and force head (1 x windmill)	,		
Windmill make:			
Windmill model:			
50mm Ø x 3.0m Galvanized medium screwed/soci	ket pipe		
SABS (9 x pipe)	p.p.c		
• 16 mm Ø x 3.0m Electro plated pump rods with so	cks and		
protectors (12 x rod)			
12 month maintenance plan (1 x windmill)			
4.1.1.2 Borehole specification (Pump depth = 27 meter	s)		
Borehole depth: 70 m	,		
Water level: Before test: 17.5 m			
After test: 17.8 m			
Delivery: 7400 l/h			
Water abstraction limit at 60 % of delivery: 4440 l/h			
4.1.1.3 Deep water cylinder diameter 60 mm tube leng	th 550		
mm (1 x cylinder)	555		
Cylinder make:			
Cylinder model:			
Cylinder size:64 mm			
Specify delivery of cylinder:770 Liters/hour			
Total head :± 27 meters			
4.1.1.4 Windmill tower foundation	- Indiana		_
Concrete strength: 30 MPa			
Size: according to the windmill manufacture's specification		1	
Provide concrete test cube results (2 x test cube)			
4.1.1.5 Supporting concrete block around casing (0.09m	3)		
Concrete strength: 30 MPa	'		
Construction material: concrete			
Size: 600mm (height) x 400mm (wide) x 400mm (length)			
, , , , , , , , , , , , , , , , , , , ,			

	F	Provide concrete test cube results (2 x tests)	1		
	4	.1.1.6 Fittings from windmill to reservoir			
	•				
		50 mm Ø brass non return valve (1 x valve)			
	•	50 mm Ø brass force head (1 x F/head)			
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe			
		(2mm thick) with 20 mm brass gate valve (1 x air chamber)			
	•	50 mm nipple (galv) (3 x nipple)			
	•	50 mm T-piece (galv) (2 x T/piece)			
	•	50 mm x 0.5-meter standpipe (galv) (1 x pipe)			
	•	40 mm male adaptor (nylon) (1 x adaptor)			
	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)			
	•	50 mm male bend (galv) (2 x bend)			
	•	40 mm male bend (galv) (1 x bend)			
1	0	40 mm pipe clamp (2 x clamp)			
•	•	40 mm LDPE pipe (250 x meter)			
4	1.1.	1.7 Repair and sealing of existing reservoir and drinking			
		trough			
		reservoir and 1 x trough)			
T	he	existing reservoir and drinking trough around needs to be			
C	lea	ned and the cracks to be repaired inside and outside with			
Si	and	d/cement filler. The inside of the reservoir and trough needs			
to	b	e sealed with geotextiles matt (90-100 g/m²) and polymer			
aı	IOI	nic bitumen emulsion sealant.			
0,	200	sification to a second			
Sr)ec	ification type of matt:			
Co	ati	ification type of sealing:			
-	. .	ng layers recommended:			
Th	e s	ealing matt should go over the wall of the reservoir down the			
ou	tsic	de wall for 30 cm and where the matt is joined the overlap			
sho	oul	d be 30 cm. Where the inner wall meets the floor the overlap			
sho	oul	d be 30 cm.			

	Mothod of application D. L.		
	Method of application: Paint area to be seal with sealant and apply		
	the matt to the area and paint the matt 4 x coats with sealant		
	Size of reservoir		
	Diameter: 5.3 meter		
	Height: 2.1 meters		
	Circumference: 16.8 meters		
	Wall thickness: 15 cm		
	Trail dilodicos. To dili		
	Size of drinking trough around reservoir		
	Width: 33 cm		
	Depth: 45 cm		
	Length from reservoir wall to trough: 35 cm		
1	4.1.1.8 Construction of new apron around existing reservoir:		
	(1 x apron)		
1	Three (3) meter apron should be constructed around the existing		
	reservoir		
1	Inner circumference apron: 23 meters		
	Outer circumference of apron: 42 meters		
	Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m		
	(50mm)]		
٧	Nidth of apron: 3 meter		
5	Size of apron: 96 m ²		
٨	Mesh type: mesh 245		
C	Concrete strength: 30 MPa		
C	Construction material: concrete		
Е	excavate 450 mm and backfill with G5 material compacted to 93%		
	MOD AASHTO		
P	rovide concrete test cube result (2 x test)		
4.	.1.1.9 Inlet pipe fittings (40 mm)		
0	2.5 meter x 40 mm standpipe (galv) (1 x pipe)		
•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)		
0	40 mm bend (galv) (3 x bend)		
•	40 mm male adaptor (galv) (2 x adaptor)		
6	40 mm pipe clamp for LDPE pipe (1 x clamp)		

4	.1.1.10 Outlet pipe fittings (40 mm)		T	_
•	40 mm outlet screen (stainless steel) (1 x screen)			
•	0.5 meter x 40 mm standpipe (galv) (1 x pipe)			
•	40 mm brass gate valve (brass) (1 x valve)			
•	40 mm float valve (1 x valve)			
•	40 mm bend (galv) (1 x bend)			
•	40 mm nipple (galv) (1 x nipple)			
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)			
•	32 mm male adaptor (1 x adaptor)			
	1.2 Maketlele (S 26° 20' 51.0"; E 23° 40' 09.1")			-
	1.2.1 Supply and installation of windmill			
1	cludes all equipment, materials, transport and labour required)	1 1		
Ins	tall a 2.5m Ø wheel with a gearbox, tail brake system, fork rod,			
bu	cket rod (pitman), wood rod x 3 meter and force head on the			
exi	sting 9-meter tower (1 x windmill)			
Win	dmill make:			
Win	dmill model:			
•	50 mm Ø x 3.0m Galvanized medium screwed/socket pipe			
	SABS (5 x pipe)			
•	16 mm Ø x 3.0m Electro plated pump rods with socks and			
	protectors (8 x rod)			
•	12-month maintenance plan (1 x windmill)			
•	Dismantle old windmill head and gearbox (1 x head &			
	gearbox)			
4.1.	2.2 Borehole specification (Pump depth = 15 meters)			
Bor	ehole depth: 98.5 m			
Wat	er level: Before test: 3 m			
	After test: 6.7 m			
Delivery: 6500 l/h				
Wat	er abstraction limit at 60 % of delivery: 3900 l/h			

	4.1.2.3 Deep-water cylinder diameter 60 mm tube length 55	0		
	mm (1 x cylinder)			
	Cylinder make:			
	Cylinder model:			
	Cylinder size:64 mm			
	Specify delivery of cylinder:770 Liters/ hour			
1	Total head:± 12meters			
	1.1.2.4 Fittings from windmill to reservoir			
	50 mm Ø brass foot valves (strainer) (1 x valve)			
	50 61			
	50 mm Ø brass non return valve (1 x valve)			
•	50 mm Ø brass force head (1 x F/head)			
	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe			
	(2mm thick) with 20mm brass gate valve (1 x air chamber)			
•	50 mm nipple (galv) (3 x nipple)			
	50 mm T-piece (galv) (2 x T/piece)			
	50 mm x 0.5 meter standpipe (galv) (1 x pipe)			
•	40 mm male adaptor (nylon) (1 x adaptor)			
•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)			
•	50 mm male bend (galv) (2 x bend)			
•	40 mm male bend (galv) (1 x bend)			
•	40 mm pipe clamp (2 x clamp)			
•	40 mm LDPE pipe (30 x meter)			
	1.2.5 Construction of concrete reservoir with drinking			1
1	ough around (1 x reservoir and 1 x trough)			
	oproximately 5m away from the windmill)			
1	cular reinforced concrete reservoir, diameter 4.5 m, height 2.1			
	wall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall			
	d floor should be reinforced horizontally and vertically.			
Re	servoir should be supplied with inlet and outlet.			
Th	e drinking trough wall should be cast simultaneously with the			
	t lift of the reservoir wall. The trough should have a wall that is			
	mm in width and 500mm high (inner face) and 700mm (outer			

	face). The width of the trough (from outer face of reservoir wall to	
	inner face of trough wall) should be 625mm.	
	The steel plate to cover the float valve in the drinking trough should be included.	
	Provide concrete test cube results (10 x test cube)	
	4.1.2.6 Construction of new apron around existing reservoir:	
	(1 x apron)	
	Three (3) meter apron should be constructed around the existing	
	reservoir	
	Inner circumference apron: 23 meters	
	Outer circumference of apron: 42 meters	
	Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m	
	(50mm)]	
	Width of apron: 3 meter	
	Size of apron: 96 m ²	
	Mesh type: mesh 245	
	Concrete strength: 30 MPa	
-	Construction material: concrete	
	Excavate 450 mm and backfill with G5 material compacted to 93%	
	MOD AASHTO	
1	Provide concrete test cube result (2 x test cube)	
	4.1.2.7 Inlet pipe fittings (40 mm)	-
,	2.5 meter x 40 mm standpipe (galv) (1 x pipe)	
•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)	
•	40 mm bend (galv) (3 x bend)	
•	40 mm male adaptor (galv) (2 x adaptor)	
•	40 mm pipe clamp for LDPE pipe (1 x clamp)	
4	4.1.2.8 Outlet pipe fittings (40 mm)	
0	(1 x screen)	
0	(gaiv) (1 x pipe)	
0	(1 X Valve)	
•	To this heat valve)	
•	40 mm bend (galv) (1 x bend)	
•	40 mm nipple (galv) (1 x nipple)	
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)	

32 mm male adaptor (1 x adaptor)			
o 32 mm male adaptor (1 x adaptor)			
4.1.3 Cardinaton /S 27° 12' 40 6"- E 22° 20' 20 5"			
4.1.3 Cardington (S 27° 12' 49.6"; E 23° 30' 36.5")			
4.1.3.1 Supply and installation of windmill			
(Includes all equipment, materials, transport and labour required)	1		
Install 9 m high windmill tower with a 3.7 m Ø wheel with a	1		
gearbox, tail brake system, fork rod, bucket rod (pitman), wood			
rod x 3 meter and force head (1 x windmill)			
Windmill make:			
Windmill model:			
50 mm Ø x 3.0m Galvanized medium screwed/socket pipe			
SABS (19 x pipe)			
16 mm Ø x 3.0m Electro plated pump rods with socks and			
protectors (22 x rod)			
 12 month maintenance plan (1 x windmill) 			
4.1.3.2 Borehole specification (Pump depth = 57 meters)			
Borehole depth: 110 m			
Water level: Before test :11 m			
After test: 50.1 m			
Delivery: 2000 l/hour			
Water abstraction limit at 60 % of delivery: 1200 l/hour			
4.1.3.3 Deep-water cylinder diameter 60 mm tube length 550			-
mm (1 x cylinder)			
Cylinder make:			
Cylinder model:			
Cylinder size:64 mm			
Specify delivery of cylinder average liters/day: 770Liters/day			
4.1.3.4 Windmill tower foundation			
Concrete strength: 30 MPa			
Size: according to the windmill manufacture's specification			
Provide concrete test cube results (2 x test cube)			
4.1.3.5 Supporting concrete block around casing (0.3m³)			-
Concrete strength: 30 MPa			
Construction material: concrete			
Size: 600mm (height) x 400mm(width) x 400mm (length)			

	P	rovide concrete test cube results (2 x test cube)	1		
	_	1.3.6 Fittings from windmill to reservoir			
	•	50 mm Ø brass foot valves (strainer) (1 x valve)			
		50 mm Ø base plate (1 x plate)			
		50 mm Ø brass non return valve (1 x valve)			
	•	50 mm Ø brass force head (1 x F/head)			
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe			
		(2mm thick) with 20mm brass gate valve (1 x air chamber)			
	•	50 mm nipple (galv) (3 x nipple)			
	•	50 mm T-piece (galv) (2 x T/piece)			
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)			
	•	40 mm male adaptor (nylon) (1 x adaptor)			
	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)			
	٠	50 mm male bend (galv) (2 x bend)			
	•	40 mm male bend (galv) (1 x bend)			
	•	40 mm pipe clamp (2 x clamp)			
	•	40 mm LDPE pipe (30 x meter)			
	4.1	3.7 Construction of concrete reservoir with drinking			-
	tro	ugh around (1 x reservoir and 1 x trough)			
	(ap	proximately 5 m away from the windmill)			
1		cular reinforced concrete reservoir, diameter 4.5 m, height 2.1			
1		wall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall			
		floor should be reinforced horizontally and vertically.			
	Res	ervoir should be supplied with inlet and outlet.			
		drinking trough wall should be cast simultaneously with the			
		lift of the reservoir wall. The trough should have a wall that			
		50mm in width and 500mm high (inner face) and 700mm			
		er face). The width of the trough (from outer face of reservoir			
		to inner face of trough wall) should be 625mm.			
		steel plate to cover the float valve in the drinking trough ald be included.			
		ide concrete test cube results (10 x test cube)			
_		The rest cape results (TO X test cape)		411	

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	4.1.3.8 Construction of new apron around reservoir (1 x apro	r		
	Three (3) meter apron should be constructed around the existing			
	reservoir			
	Inner circumference apron: 23 meters			
	Outer circumference of apron: 42 meters			
	Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m			
	(50mm)]			
1	Width of apron: 3 meter			
	Size of apron: 96 m ²			
1	Mesh type: mesh 245			
(Concrete strength: 30 MPa			
(Construction material: concrete			
E	Excavate 450 mm and backfill with G5 material compacted to 93%			
1	ASHTO			
F	Provide concrete test cube results (2 x test cube)			
4	.1.3.9 Inlet pipe fittings (40 mm)			
	2.5 meter x 40 mm standpipe (galv) (1 x pipe)			
	0.3 meter x 40 mm standpipe (galv) (1 x pipe)			
	40 mm bend (galv) (3 x bend)			
	40 mm male adaptor (galv) (2 x adaptor)			
•	40 mm pipe clamp for LDPE pipe (1 x clamp)			
4	I.1.3.10 Outlet pipe fittings (40 mm)			
0	40 mm outlet screen (stainless steel) (1 x screen)			
	0.5 meter x 40 mm standpipe (galv) (1 x pipe)			
	40 mm brass gate valve (brass) (1 x valve)			
	40 mm bend (galv) (1 x bend)			
	40 mm float valve (1 x valve)			
	40 mm T- piece (1 x T/piece)			
•	40 mm nipple (galv) (1 x nipple)			
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)			
•	32 mm male adaptor (1 x adaptor)			
4.	1.3.11 Supply and installation of concrete casted drinking			
	oughs (2 x trough)			
	oproximately 120 m away from the reservoir)		- Allerina	
	inking troughs specifications			

Г	Concrete casted drinking troughs with cover to protect ball valve	1		_
	Size: length 2.4 meter x width 0.65 meter x depth 0.56 meter			
	Capacity: 400 liters per trough			
- 1	4.1.3.12 Slab specification for drinking troughs (2 x slab)			
- 1	Concrete strength: 30 MPa			
	Construction material: concrete			
	Backfilling: G5 material			
3	Slab size: 9 meter x 7 meter x 0.15 meter			
3	Size: 62 m ² (9.45 m ³ concrete)			
N	Mesh type: mesh 245			
E	xcavation depth: 450 mm			
F	Provide concrete test cube results for slab (2 x test cube)			
4	.1.3.13 The trench specification (240 m)			
1	Size: The pipe should be buried in a trench of 0.5m deep with			
tł	ne width of 0.3m			
4	.1.3.14 Fittings for troughs			
•	32 mm inserts T-piece (nylon) (4 x T/piece)			
•	32 mm male adaptor (nylon) (2 x adaptor)			
•	32 mm x 0.8m standpipe (2 x pipe)			
•	32 mm nipple (galv) (2 x nipple)			
	32 mm bend (galv) (2 x bend)			
•	32 mm M&F bend (2 x bend)			
•	32 mm brass gate valve (2 x valve)			
•	32 mm ball valve (2 x valve)			
	32 mm float valve (control water level) (2 x valve)			
•	32 mm clamp (wire type) (24 x clamp)			
	32 mm class 3 LDPE pipe (300 x meter)			
•	Thread tape (20 x roll)			
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	4.1.4 Maruping (S 27° 21′ 18.0″; E 23° 22′ 49.5″)		
	4.1.4.1 Supply and installation of Windmill		
	(Includes all equipment, materials, transport and labour required)		
	Install 9 m high windmill tower with a 2.5m Ø wheel with a		
	gearbox, tail brake system, fork rod, bucket rod (pitman), wood		
	rod x 3 meter and force head. (1 x windmill)		
	Windmill make:		
	Windmill model:		
	 50 mm Ø x 3.0m Galvanized medium screwed/socket pipe 		
	SABS (13 x pipe)		
	 16 mm Ø x 3.0m Electro plated pump rods with socks and 		
	protectors (17 x rod)		
	 12 month maintenance plan (1 x windmill) 		
	4.1.4.2 Borehole specification (Pump depth = 39 meters)		
	Borehole depth: 92.5 meters		
	Water level: Before test: 31.2 m		
	After test: 31.3 m		
	Delivery: 6 400 l/h		
	Water abstraction limit at 60 % of delivery: 3 840 l/h		
	4.1.4.3 Deep-water cylinder diameter 60 mm tube length 550		
	mm (1 x cylinder)		
	Cylinder make:		
	Cylinder model:		
- 10	Cylinder size:64 mm		
	Specify delivery of cylinder:770 Liters/ hour		
	Total head:± 35meters		
4	1.1.4.4 Windmill tower foundation		
(Concrete strength: 30 MPa		
(Construction material: concrete		
5	Size: according to the windmill manufacture's specification		
1	Provide concrete test cube results (2 x test cube)		
	.1.4.5 Supporting concrete block around casing (0.09 m³)		
	Concrete strength: 30 MPa		
C	Construction material: G5		
S	ize: 600mm (height) x 400mm (wide) x 400mm (length)		
	, , , , , ,		

D.			
	ovide concrete test cube results (2 x test cube)		
4.	1.4.6 Fittings from windmill to reservoir		
•	50 mm Ø brass foot valves (strainer) (1 x valve)		
•	50 mm Ø base plate (1 x plate)		
•	50 mm Ø brass non return valve (1 x valve)		
•	50 mm Ø brass force head (1 x F/head)		
•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe		
	(2mm thick) with 20mm brass gate valve (1 x air chamber)		
•	50 mm nipple (galv) (3 x nipple)		
•	50 mm T-piece (galv) (2 x T/piece)		
	50 mm x 0.5 meter standpipe (galv) (1 x pipe)		
•	40 mm male adaptor (nylon) (1 x adaptor)		
•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)		
•	50 mm male bend (galv) (2 x bend)		
	40 mm male bend (galv) (1 x bend)		
•	40 mm pipe clamp (2 x clamp)		
•	40 mm LDPE pipe (30 x meter)		
4.1.	4.7 Construction of concrete reservoir with drinking		
trou	igh around (1 x reservoir and 1 x trough		
(app	proximately 5 m away from the windmill)		
Circ	ular reinforced concrete reservoir, diameter 4.5 m, height 2.1		
m, v	vall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall		
and	floor should be reinforced horizontally and vertically.		
Res	ervoir should be supplied with inlet and outlet.		
	drinking trough wall should be cast simultaneously with the		
	ift of the reservoir wall. The trough should have a wall that is		
	nm in width and 500mm high (inner face) and 700mm (outer		
	. The width of the trough (from outer face of reservoir wall		
	ner face of trough wall) should be 625mm.		
The	steel plate to cover the float valve in the drinking trough s		
be in	cluded.		
Provi	de concrete test cube results (10 x test cube)		

		1.1.4.8 Construction of new apron around reservoir (1 x apror
	7	Three (3) meter apron should be constructed around the existing
	r	eservoir.
	1	nner circumference apron: 23 meters
	(Outer circumference of apron: 42 meters
	T	hickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m
	6	50mm)]
	V	Vidth of apron: 3 meter
	S	ize of apron: 96 m ²
	N	lesh type: mesh 245
	C	oncrete strength: 30 MPa
	С	onstruction material: concrete
	E	xcavate 450 mm and backfill with G5 material compacted to
		3% MOD AASHTO
	Pı	rovide concrete test cube results (2 x test cube)
	4.	1.4.9 Inlet pipe fittings (40 mm)
	•	2.5 meter x 40 mm standpipe (galv) (1 x pipe)
	•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)
	•	40 mm bend (galv) (3 x bend)
Section 1	•	40 mm male adaptor (galv) (2 x adaptor)
Personal Property lies	•	40 mm pipe clamp for LDPE pipe (1 x clamp)
	4.	1.4.10 Outlet pipe fittings (40 mm)
	•	40 mm outlet screen (stainless steel) (1 x screen)
	•	0.5 meter x 40 mm standpipe (galv) (1 x pipe)
	•	40 mm brass gate valve (brass) (1 x valve)
	•	40 mm float valve (1 x valve)
	•	40 mm T-piece (1 x T/piece)
	•	40 mm bend (galv) (1 x bend)
0.00	•	40 mm nipple (galv) (1 x nipple)
	•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)
	•	32 mm male adaptor (1 x adaptor)

	4.1.4.11 Supply and installation of concrete casted drinking		
	troughs (2 x trough)		
	(approximately 120 m away from the reservoir)		
	<u>Drinking troughs specifications</u>		
	Concrete casted drinking troughs with cover to protect ball valve		
	Size: length 2.4 meter x width 1.65 meter x depth 0.56 meter		
	Capacity : 400 liters per trough		
	4.1.4.12 Slab specification for drinking troughs (2 x slab)		
	Concrete strength: 30 MPa		
	Construction material: concrete		
	Backfilling: G5 material		
	Slab size: 9 meter x 7 meter x 0.15 meter		
	Size: 62 m ² (9.45 m ³ concrete)		
	Mesh type: mesh 245		
	Excavation depth: 450 mm		
	Provide concrete test cube results for slab (2 x test cube)		
	4.1.4.13 The trench specification (240 m)		
	Size: The pipe should be buried in a trench of 0.5 m deep with		•
1	he width of 0.3m		
4	4.1.4.14 Fittings for troughs		
•	32 mm inserts T-piece (nylon) (4 x T/piece)		
	32 mm male adaptor (nylon) (2 x adaptor)		
•	32 mm x 0.8m standpipe (2 x pipe)		
•	32 mm nipple (galv) (2 x nipple)		
•	32 mm bend (galv) (2 x bend)		
٠	32 mm M&F bend (2 x bend)		
•	32 mm brass gate valve (2 x valve)		
•	32 mm ball valve (2 x valve)	The state of the s	
•	32 mm float valve (control water level) (2 x valve)		
	32 mm clamp (wire type) (24 x clamp)		
•	32 mm class 3 LDPE pipe (300 x meter)		
•	Thread tape (20 x roll)		

4.1.5 Metsimantsi Wyk 7 (S 27° 00' 23.9"; E 23° 12' 39.3")	
4.1.5.1 Supply and installation of Windmill	
(Includes all equipment, materials, transport and labour required)	
Install 9 m high windmill tower with a 2.5 m Ø wheel with a	
gearbox, tail brake system, fork rod, bucket rod (pitman), wood	
rod x 3 meter and force head. (1 x windmill)	
Windmill make:	
Windmill model:	
 50 mm Ø x 3.0m Galvanized medium screwed/socket pipe 	
SABS (4 x pipe)	
16 mm Ø x 3.0m Electro plated pump rods with socks and	
protectors (7 x rod)	
12-month maintenance plan (1 x windmill)	
Dismantle of old windmill and remove pipes and rods (1 x)	
windmill)	
4.1.5.2 Borehole specification (Pump depth = 12 meters)	
Borehole depth: 19.1 m	
Water level: Before test: 4 m	
After test: 4 m	
Delivery: 6 000 l/h	
Water abstraction limit at 60 % of delivery: 3 600 l/h	
4.1.5.3 Deep-water cylinder diameter 60 mm tube length 550	
mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	
Cylinder size:64 mm	
Specify delivery of cylinder:770 Liters/ hour	
Total head:± 10meters	
1.1.5.4 Windmill tower foundation	
Concrete strength: 30 MPa	
Size: according to the windmill manufacture's specification	
Provide concrete test cube results (2 x test cube)	
.1.5.5 Supporting concrete block around casing (0.09m³)	
Concrete strength: 30 MPa	
Construction material: concrete	

Size: 600mm (height) x 400mm (wide) x 400mm (length) Provide concrete test cube results (2 x test cube) 4.1.5.6 Fittings from windmill to reservoir 50 mm Ø brass foot valves (strainer) (1 x valve) 50 mm Ø base plate (1 x plate) 50 mm Ø brass non return valve (1 x valve) 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 50 mm male bend (galv) (2 x bend)	
 4.1.5.6 Fittings from windmill to reservoir 50 mm Ø brass foot valves (strainer) (1 x valve) 50 mm Ø base plate (1 x plate) 50 mm Ø brass non return valve (1 x valve) 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm Ø brass foot valves (strainer) (1 x valve) 50 mm Ø base plate (1 x plate) 50 mm Ø brass non return valve (1 x valve) 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm Ø base plate (1 x plate) 50 mm Ø brass non return valve (1 x valve) 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm Ø brass non return valve (1 x valve) 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm Ø brass force head (1 x F/head) 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 (2mm thick) with 20mm brass gate valve (1 x air chamber) 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm nipple (galv) (3 x nipple) 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm T-piece (galv) (2 x T/piece) 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
 40 mm male adaptor (nylon) (1 x adaptor) 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
50 mm x 40 mm reducing bush (nylon) (1 x R/bush)	
• 50 mm male hend (galv) (2 v hand)	
os min male bend (galv) (2 x bend)	
40 mm male bend (galv) (1 x bend)	
40 mm pipe clamp (2 x clamp)	
40 mm LDPE pipe (30 x meter)	
4.1.5.7 Construction of new apron around existing reservoir	
(1 x apron)	
Three (3) meter apron around the existing reservoir should be	
constructed	
Inner circumference apron: 23 meters	
Outer circumference of apron: 42 meters	
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m	
(50mm)]	
Width of apron: 3 meter	
Size of apron: 96 m ²	
Mesh type: mesh 245	
Concrete strength: 30 MPa	
Construction material: concrete	
Excavate 450 mm and backfill with G5 material compacted to	1
93% MOD AASHTO	
Provide concrete test cube result (2 x test cube)	

4.1.5.8 Outlet pipe fittings (40 mm)	
40 mm float valve (control water level)	
4.1.6 Metsimantsi Wyk 2 (S 26° 58' 44.9"; E 23° 09' 20.4")	
4.1.6.1 Supply and installation of Windmill	
(Includes all equipment, materials, transport and labour required)	
Install 9 m high windmill tower with a 3.0m Ø wheel with a	
gearbox, tail brake system, fork rod, bucket rod (pitman), wood	
rod x 3 meter and force head (1 x windmill)	
Windmill make:	
Windmill model:	
 50 mm Ø x 3.0m Galvanized medium screwed/socket pipe 	
SABS (15 x pipe)	
 16 mm Ø x 3.0m Electro plated pump rods with socks and 	
protectors (18 x rod)	
12-month maintenance plan (1 x windmill)	
 Dismantle of old windmill and remove the pipes and rods (1 x windmill) 	
4.1.6.2 Borehole specification (Pump depth = 45 meters)	
Borehole depth: 53 m	
Water level: Before test: 12.5 m	
After test: 37.2 m	
Delivery: 2 000 l/h	
Water abstraction limit at 60 % of delivery: 1 200 l/h	
4.1.6.3 Deep-water cylinder diameter 60 mm tube length 550	
mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	
Cylinder size:64 mm	The second secon
Specify delivery of cylinder:770 Liters/ hour	
Total head:± 41meters	
4.1.6.4 Windmill tower foundation	
Concrete strength: 30 MPa	
Size: according to the windmill manufacture's specification	
Provide concrete test cube results (2 x test cube)	
	1

	4	1.6.5 Supporting concrete block around casing (0.3m³)	
		oncrete strength: 30 MPa	
	C	onstruction material: concrete	
	S	ze: 600mm (height) x 400mm (wide) 400mm (length)	
	P	rovide concrete test cube results (2 x test cube)	
	4.	1.6.6 Fittings from windmill to reservoir	
	•	50 mm Ø brass foot valves (strainer) (1 x valve)	
	•	50 mm Ø base plate (1 x plate)	
	•	50 mm Ø brass non return valve (1 x valve)	
	•	50 mm Ø brass force head (1 x F/head)	
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe	
		(2mm thick) with 20mm brass gate valve (1 x air chamber)	
	•	50 mm nipple (galv) (3 x nipple)	
	•	50 mm T-piece (galv) (2 x T/piece)	
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)	
	•	40 mm male adaptor (nylon) (1 x adaptor)	
	٠	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)	
-	•	50 mm male bend (galv) (2 x bend)	
-	•	40 mm male bend (galv) (1 x bend)	
	•	40 mm pipe clamp (2 x clamp)	
	•	40 mm LDPE pipe (30 x meter)	

4.1.6.7 Repair and sealing of existing reservoir and drinking trough around (1 \times reservoir and 1 \times trough)

The existing reservoir and drinking trough around needs to be cleaned and the cracks to be repaired inside and outside with sand/cement filler. The inside of the reservoir and trough needs to be sealed with geotextiles matt (90-100 g/m²) and polymer anionic bitumen emulsion sealant.

Specification type of matt:...

Specification type of sealing:...

Coating layers recommended:

The sealing matt should go over the wall of the reservoir down the outside wall for 30 cm and where the matt is joined the overlap should be 30 cm. Where the inner wall meets the floor the overlap should be 30 cm.

Method of application: Paint area to be seal with sealant and apply the matt to the area and paint the matt 4 x coats with sealant

Size of reservoir

Diameter: 5.10 meter Height: 2.9 meters

Circumference: 16.2 meters

Size of drinking trough around reservoir

Width: 20 cm Depth: 50 cm

Length from reservoir wall to trough: 35 cm

	_				
		4.1.6.8 Construction of new apron around existing reservoir	•		
	-	(1 x apron)			
	1	Three (3) meter apron should be constructed around the existing	1		
	1	eservoir.			
	1	nner circumference apron : 23 meters			
	(Outer circumference of apron : 42 meters			
	7	hickness of apron : 50 mm &100 mm [for 1 m (100mm) and 2			
		n (50mm)]			
	V	Vidth of apron : 3 meter			
	S	ize of apron:96 m²			
	N	lesh type: mesh 245			
	C	oncrete strength: 30 MPa			
	C	onstruction material: concrete			
	E	xcavate 450 mm and backfill with G5 material compacted to			
		3% MOD AASHTO			
	Р	rovide concrete test cube results (2 x cube)			
	4.	1.6.9 Inlet pipe fittings (40 mm)			
	•	2.5 meter x 40 mm standpipe (galv) (1 x pipe)			
-	•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)			
	•	40 mm bend (galv) (3 x bend)			
	٠	40 mm male adaptor (galv) (2 x adaptor)			
	•	40 mm pipe clamp for LDPE pipe (1 x clamp)			
	4.	1.6.10 Outlet pipe fittings (40 mm)			
	•	40 mm outlet screen (stainless steel) (1 x screen)			
	•	0.5 meter x 40 mm standpipe (galv) (1 x pipe)			
	•	40 mm brass gate valve (brass) (1 x valve)			
	•	40 mm bend (galv) (1 x bend)			
9	•	40 mm float valve (1 x valve)			
	•	40 mm T-piece (1 x T/piece)			
•	•	40 mm nipple (galv) (1 x nipple)			
•	•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)			
•	•	32 mm male adaptor (1 x adaptor)			

	4.1.6.11 Supply and installation of concrete casted drinking	T	1
	troughs (2 x trough)		
	(approximately 120 m away from the reservoir)		
	Drinking troughs specifications		
	Concrete casted drinking troughs with cover to protect ball valve		
	Size: length 2.4 meter x width 0.65 meter x depth 0.56 meter		
	Capacity: 400 liters per trough		
-	4.1.6.12 Slab specification for drinking troughs (2 x slab)		
	Concrete strength: 30 MPa		
	Construction material: concrete		
	Backfilling: G5 material		
	Slab size: 9 meter x 7 meter x 0.15 meter		
	Size: 62 m² (9.45 m³ concrete)		
	Mesh type: mesh 245		
	Excavation depth: 450 mm		
	Provide concrete test cube results for slab (2 x test cube)		
	4.1.6.13 The trench specification (240 m)		
	Size: The pipe should be buried in a trench of 0.5m deep with the		
,	width of 0.3m		
4	4.1.6.14 Fittings for troughs		
,	32 mm inserts T-piece (nylon) (4 x T/piece)		
	32 mm male adaptor (nylon) (2 x adaptor)		
•	32 mm x 0.8m standpipe (2 x pipe)		
•	32 mm nipple (galv) (2 x nipple)		
•	32 mm bend (galv) (2 x bend)		
•	32 mm M&F bend (2 x bend)		
•	32 mm brass gate valve (2 x valve)		
0	32 mm ball valve (2 x valve)		
•	32 mm float valve (control water level) (2 x valve)		
0	32 mm clamp (wire type) (24 x clamp)		
•	32 mm class 3 LDPE pipe (300 x meter)		
•	Thread tape (20 x roll)		
			1

4 1 7 Metrimental Work 4 (\$ 26° 55' 44 6", 5 22° 20' 20 7")	
4.1.7 Metsimantsi Wyk 4 (S 26° 55' 41.6"; E 23° 08' 09.7")	
4.1.7.1 Supply and installation of Windmill	
(Includes all equipment, materials, transport and labour required)	
Install 9 m high windmill tower with a 3.0m Ø wheel with a	
gearbox, tail brake system, fork rod, bucket rod (pitman), wood	
rod x 3 meter and force head (1 x windmill)	
Windmill make:	
Windmill model:	
50 mm Ø x 3.0m Galvanized medium screwed/socket pipe SABS (9 x pipe)	
• 16 mm Ø x 3.0m Electro plated pump rods with socks and	
protectors (12 x rod)	
12-month maintenance plan (1 x windmill) Diamonths of old windwill and a second	
 Dismantle of old windmill ad remove the pipes and rods (1 x windmill) 	
4.1.7.2 Borehole specification (Pump depth = 27 meters)	
Borehole depth: 58 m	
Water level: Before test: 19 m	
After test: 19.7 m	
Delivery: 6 000 I/h	
Water abstraction limit at 60 % of delivery: 3 600 I/h	
4.1.7.3 Deep-water cylinder diameter 60 mm tube length 550	
mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	
Cylinder size:64 mm	
Specify delivery of cylinder:770 Liters/ hour	
Total head:± 25meters	
4.1.7.4 Windmill tower foundation	
Concrete strength: 30 MPa	
Size: according to the windmill manufacture's specification	
Provide concrete test cube results (2 x test cube)	
4.1.7.5 Supporting concrete block around casing (0.09m³)	
Concrete strength: 30 MPa	
Construction material: concrete	

	Si	79: 600mm (hoight) x 400mm (wide) x 400 (1 11)		 	
		ze: 600mm (height) x 400mm (wide) x 400mm (length)			
		ovide concrete test cube results (2 x test cube)			
	٠.	1.7.6 Fittings from windmill to reservoir			
0.000	•	50 mm Ø brass foot valves (strainer) (1 x valve)			
	•	50 mm Ø base plate (1 x plate)			
	•	50 mm Ø brass non return valve (1 x valve)			
	•	50 mm Ø brass force head (1 x F/head)			
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pip	9		
		(2mm thick) with 20mm brass gate valve (1 x air chamber)			
	•	50 mm nipple (galv) (3 x nipple)			
	•	50 mm T-piece (galv) (2 x T/piece)			
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)			
	•	40 mm male adaptor (nylon) (1 x adaptor)			
	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)			
	•	50 mm male bend (galv) (2 x bend)			
	•	40 mm male bend (galv) (1 x bend)			
	•	40 mm pipe clamp (2 x clamp)			
	•	40 mm LDPE pipe (30 x meter)			
-	4.1.	7.7 Repair and sealing of existing reservoir and drinking	1		
		ugh around (1 x reservoir and 1 x trough)			
		existing reservoir and drinking trough around the reservoir			
		d to be cleaned and the cracks to be repaired inside and			
		side with sand/cement filler. The inside of the reservoir and	1		
		king trough needs to be sealed with geotextiles matt (90-100	1		
		²) and polymer anionic bitumen emulsion sealant.			
5	Spe	cification type of matt:			
		cification type of sealing:			
		ting layers recommended :			
		<u> </u>			
T	he	sealing matt should go over the wall of the reservoir down			
		outside wall for 30 cm and where the matt is joined the			
		lap should be 30 cm.			
		re the inner wall meets the floor the overlap should be 30			
	m.	and wan meets the moor the overlap should be 30			
_					

Method of application: Paint area to be seal with sealant and apply the matt to the area and paint the matt 4 x coats with sealant Size of reservoir Diameter: 5.10 meter Height: 2.9 meters Circumference: 16.02 meters Size of drinking trough around reservoir Width: 40 cm Depth: 50 cm Length from reservoir wall to trough: 30cm 4.1.7.8 Repair of apron around existing reservoir (1 x apron) Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96. m² Concrete strength: 30 MPa Construction material: concrete Mesh type: mesh 245 Excavate 450 mm and backfill with G5 material compacted to 93% MOD AASHTO Provide concrete test cube results (2 x test cube) 4.1.7.9 Inlet pipe fittings (40 mm) 2.5 meter x 40 mm standpipe (galv) (1 x pipe) 0.3 meter x 40 mm standpipe (galv) (1 x pipe) 40 mm bend (galv) (3 x bend) 40 mm male adaptor (galv) (2 x adaptor) 40 mm pipe clamp for LDPE pipe (1 x clamp)

4.1.7.10 Outlet pipe fittings (40 mm)	
40 mm outlet screen (stainless steel) (1 x screen)	
0.5 meter x 40 mm standpipe (galv) (1 x pipe)	
40 mm brass gate valve (brass) (1 x valve)	
40 mm bend (galv) (1 x bend)	
40 mm float valve (1 x valve)	
40 mm nipple (galv) (1 x nipple)	
40 mm x 32 mm reducing bush (galv) (1 x R/bush)	
32 mm male adaptor (1 x adaptor)	
4.1.8 Longhurst (\$ 26°54' 57.9"; E 23° 32' 43.7")	
4.1.8.1 Supply and installation of windmill	
(Includes all equipment, materials, transport and labour required)	
Install 9 m high windmill tower with a 2.5 m Ø wheel with a	
gearbox, tail brake system, fork rod, bucket rod (pitman), wood	
rod x 3 meter and force head (1 x windmill)	
Windmill make:	
Windmill model:	
50mm Ø x 3.0m Galvanized medium screwed/socket pipe	
SABS (16 x pipe)	
16 mm Ø x 3.0m Electro plated pump rods with socks and	
protectors (17 x rod)	
12-month maintenance plan (1 x windmill)	
Dismantle of old windmill and remove pipes and rods (1 x windmill)	
4.1.8.2 Borehole specification (Pump depth = 42 meters)	
Borehole depth: 50 m	
Water level: Before test: 24 m	
After test: 38.2 m	
Delivery: 2000 l/h	
Water abstraction limit at 60 % of delivery: 1200 l/h	
4.1.8.3 Deep-water cylinder diameter 60 mm tube length 550	
mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	

	(Cylinder size:64 mm		
	3	Specify delivery of cylinder:770 Liters/hour		
		otal head :± 42 meters		
	4	.1.8.4 Windmill tower foundation		
	C	concrete strength: 30 MPa		
	S	ize: according to the windmill manufacture's specification		
	P	rovide concrete test cube results (2 x test cube)		
	4	1.8.5 Supporting concrete block around casing (0.09m³)		
	C	oncrete strength: 30 MPa		
	C	onstruction material: concrete		
	S	ze: 600mm (height) x 400mm (wide) x 400mm (length)		
	P	rovide concrete test cube results (2 x test cube)		
	4.	1.8.6 Fittings from windmill to reservoir		
	•	50 mm Ø brass foot valves (strainer) (1 x valve)		
-	•	50 mm Ø base plate (1 x plate)		
	•	50 mm Ø brass non return valve (1 x valve)		
	•	50 mm Ø brass force head (1 x F/head)		
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe		
		(2mm thick) with 20mm brass gate valve (1 x air chamber)		
	•	50 mm nipple (galv) (3 x nipple)		
	٠	50 mm T-piece (galv) (2 x T/piece)		
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)		
	0	40 mm male adaptor (nylon) (1 x adaptor)		
	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)		
	•	50 mm male bend (galv) (2 x bend)		
	•	40 mm male bend (galv) (1 x bend)		
	•	40 mm pipe clamp (2 x clamp)		
	•	40 mm LDPE pipe (30 x meter)		

4.1.8.7 Construction of concrete reservoir with drinking t around (1 x reservoir and 1 x trough) (approximately 5m away from the windmill) Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1 m, wall thickness 225 mm, capacity 33.5 m3 (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and outlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough sho included. Provide concrete test cube results (10 x test cube) 4.1.8.8 Construction of new apron around reservoir (1 x apror Three (3) meter apron should be constructed around the existing reservoir Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)1 Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450 mm and backfill with G5 material compacted to 93% MOD AASHTO Provide concrete test cube results (2 x test cube)

4.1	.8.9 Inlet pipe fittings (40 mm)		1
•	2.5 meter x 40 mm standpipe (galv) (1 x pipe)		
•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)		
•	40 mm bend (galv) (3 x bend)		
	40 mm male adaptor (galv) (2 x adaptor)		
•	40 mm pipe clamp for LDPE pipe (1 x clamp)		
4.1	.8.10 Outlet pipe fittings (40 mm)		
•	40 mm outlet screen (stainless steel) (1 x screen)		
•	0.5 meter x 40 mm standpipe (galv) (1 x pipe)		
•	40 mm brass gate valve (brass) (1 x valve)		
•	40 mm float valve (1 x valve)		
•	40 mm T-piece (1 x T/piece)		
•	40 mm bend (galv) (1 x bend)		
•	40 mm nipple (galv) (1 x nipple)		
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)		
•	32 mm male adaptor (1 x adaptor)		
4.1.	8.11 Supply and installation of concrete casted drinking		
trou	ighs (2 x trough)		
(app	proximately 120 m away from the reservoir)		
Drin	king troughs specifications		
Con	crete casted drinking troughs with cover to protect ball valve		
Size	: length 2.4 meter x width 0.65 meter x depth 0.56 meter		
Cap	acity: 400 liters per trough		
4.1.8	3.12 Slab specification for drinking troughs (2 x slab)		
No.	crete strength: 30 MPa		
Cons	struction material: concrete		
Back	filling: G5 material		
Slab	size: 9-meter x 7-meter x 0.15 meter		
Size	62 m ² (9.45 m ³ concrete)		
Mesi	type: mesh 245		
Exca	vation depth: 450 mm		
Prov	de concrete test cube results for slab (2 x test cube)		
4.1.8	.13 The trench specification (240 m)		

	Si	ze: The pipe should be buried in a trapph of 0 5m down it			1		
		ze: The pipe should be buried in a trench of 0.5m deep with dth of 0.3m	the				
	4.1	.8.14 Fittings for troughs	-				
	•	32 mm inserts T-piece (nylon) (4 x T/piece)					
	•	32 mm male adaptor (nylon) (2 x adaptor)					
	•	32 mm x 0.8m standpipe (2 x pipe)					
		32 mm nipple (galv) (2 x nipple)					
		32 mm bend (galv) (2 x bend)					
		32 mm M&F bend (2 x bend)					
		32 mm brass gate valve (2 x valve)					
	•	32 mm ball valve (2 x valve)					
		32 mm float valve (control water level) (2 x valve)					
	•	32 mm clamp (wire type) (24 x clamp)					
		32 mm class 3 LDPE pipe (300 x meter)					
		Thread tape (20 x roll)					
		, (=0.1.0.1)					
	4.1.	9 Wingate (S 27°06'28.9"; E 23°15'02.8")		1			
		9.1 Supply and installation of Windmill					
		udes all equipment, materials, transport and labour required	/)				
		all 9 m high windmill tower with a 2.5 m Ø wheel with					
		box, tail brake system, fork rod, bucket rod (pitman), woo					
		3 meter and force head (1 x windmill)	-				
		mill make:					
		mill model:					
		0 mm Ø x 3.0m Galvanized medium screwed/socket pipe					
		ABS (14 x pipe)					
		6 mm Ø x 3.0m Electro plated pump rods with socks and					
		rotectors (16 x rod)					
•	1:	2-month maintenance plan (1 x windmill)					
,		smantle of old windmill and remove pipes and rods (1 x					
		ndmill)					
-							

	4.1.9.2 Borehole specification (Pump depth = 42 meters)	_
	Borehole depth: 55 m	
	Water level: Before test: 8 m	
	After test: 34 m	
	Delivery: 2000l/h	
	Water abstraction limit at 60 % of delivery: 1200 l/h	
1	4.1.9.3 Deep-water cylinder diameter 60 mm tube length 550	_
	mm (1 x cylinder)	
	Cylinder make:	
	Cylinder model:	
	Cylinder size:64 mm	
	Specify delivery of cylinder:770 Liters/ hour	
	Total head:± 42meters	
-	4.1.9.4 Windmill tower foundation	
	Concrete strength: 30 MPa	
	Size: according to the windmill manufacture's specification	
1	Provide concrete test cube results (2 x test cube)	
4	4.1.9.5 Supporting concrete block around casing (0.09m³)	-
(Concrete strength: 30 MPa	
(Construction material: concrete	
5	Size: 600mm (height) x 400mm (wide) x 400mm (length)	
F	Provide concrete test cube results (2 x test cube)	
4	1.1.9.6 Fittings from windmill to reservoir	
•	50 mm Ø brass foot valves (strainer) (1 x valve)	
0	50 mm Ø base plate (1 x plate)	
•	50 mm Ø brass non return valve (1 x valve)	
•	50 mm Ø brass force head (1 x F/head)	
•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe	
	(2mm thick) with 20mm brass gate valve (1 x air chamber)	
•	50 mm nipple (galv) (3 x nipple)	
•	50 mm T-piece (galv) (2 x T/piece)	
0	50 mm x 0.5 meter standpipe (galv) (1 x pipe)	
9	40 mm male adaptor (nylon) (1 x adaptor)	
,	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)	
1	50 mm male bend (galv) (2 x bend)	

• 40 mm male hend (galy) (1 x hand)	1	T	 _
To min male bend (gaiv) (1 x bend)			
10 mm pipe damp (2 x damp)	The state of the s		
40 mm LDPE pipe (30 x meter)			
4.1.9.7 Repair and sealing of existing reservoir and trough			
(1 x reservoir and 1 X trough)			
The existing reservoir and drinking trough around the reservoir			
need to be cleaned and the cracks to be repaired inside and			
outside with sand/cement filler. The inside of the reservoir and			
drinking trough needs to be sealed with geotextiles matt (90-100			
g/m²) and polymer anionic bitumen emulsion sealant.			
Specification type of matt:			
Specification type of sealing:			
Coating layers recommended:			
The sealing matt should go over the wall of the reservoir down			
the outside wall for 30 cm and where the matt is joined the			
overlap should be 30 cm. Where the inner wall meets the floor			
the overlap should be 30 cm.			
Method of application: Paint area to be seal with sealant and			
apply the matt to the area and paint the matt 4 x coats with			
sealant			
Size of reservoir			
Diameter: 5.09 meter			
Height: 2.9 meters			
Circumference: 16.2 meters			
Size of drinking trough around reservoir			
Width: 33 cm			-
Depth: 45 cm			
Length from reservoir wall to trough: 35 cm			

ĺ	4.1.9.8 Construction of new apron around existing reservoir		
	(1 x apron)		
	Three (3) meter apron should be constructed around the existing		
	reservoir.		
	Inner circumference apron: 23 meters		
	Outer circumference of apron: 42 meters		
	Thickness of apron : 50 mm &100 mm [for 1 m (100mm) and 2		
	m (50mm)]		
	Width of apron: 3 meter		
	Size of apron: 96 m²		
1	Mesh type: mesh 245		
(Concrete strength: 30 MPa		
(Construction material: concrete		
E	Excavate 450 mm and backfill with G5 material compacted to		
	93% MOD AASHTO		
F	Provide concrete test cube result (2 x test cube)		
C	Cutting down of the trees (2 x tree)		
4	.1.9.9 Inlet pipe fittings (40 mm)		
•	2.5 meter x 40 mm standpipe (galv) (1 x pipe)		
•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)		
•	40 mm bend (galv) (3 x bend)		
•	40 mm male adaptor (galv) (2 x adaptor)		
٠	40 mm pipe clamp for LDPE pipe (1 x clamp)		
4.	1.9.10 Outlet pipe fittings (40 mm)		
•	40 mm outlet screen (stainless steel) (1 x screen)		
•	0.5 meter x 40 mm standpipe (galv) (1 x pipe)		
•	40 mm brass gate valve (brass) (1 x valve)		
•	40 mm bend (galv) (1 x bend)		
•	40 mm float valve (1 x valve)		
•	40 mm nipple (galv) (1 x nipple)		
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)		
•	32 mm male adaptor (1 x adaptor)		

4.1.10 Dithelema (Lakelena) (0.0700 (L.10.07 E.000 Tol.)	
4.1.10 Dithakong (Lokaleng) (S 27°04' 49.8"; E 23° 56' 40.1")	
4.1.10.1 Supply and installation of windmill	
(Includes all equipment, materials, transport and labour required)	
Install 9 m high windmill tower with a 3 m Ø wheel with a gearbox,	
tail brake system, fork rod, bucket rod (pitman), wood rod x 3	
meter and force head (1 x windmill)	
Windmill make:	
Windmill model:	
50mm Ø x 3.0m Galvanized medium screwed/socket pipe	
SABS (19 x pipe)	
16 mm Ø x 3.0m Electro plated pump rods with socks and	
protectors (22 x rod)	
12-month maintenance plan (1 x windmill)	
Dismantle of old windmill and remove pipes and rods (1 x)	
windmill)	
4.1.10.2 Borehole specification (Pump depth = 57 meters)	-
Borehole depth: 59 m	
Water level: Before test: 24	
After test: 50	
Delivery: 1500 l/h	
Water abstraction limit at 60 % of delivery: 900 l/h	
4.1.10.3 Deep-water cylinder diameter 50 mm tube length	\dashv
550 mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	
Cylinder size:50 mm	
Specify delivery of cylinder: 500 Liters/hour	
Total head:± 60 meters	
4.1.10.4 Windmill tower foundation	-
Concrete strength: 30 MPa	
Size: according to the windmill manufacture's specification	
Provide concrete test cube results (2 x test cube)	
4.1.10.5 Supporting concrete block around casing (0.09m³)	_
Concrete strength: 30 MPa	
Construction material: concrete	

Size: 600mm (height) x 400mm (wide) x 400mm (length)	1
Provide concrete test cube results (2 x test cube)	
4.1.10.6 Fittings from windmill to reservoir	
• 50 mm Ø brass foot valves (strainer) (1 x valve)	
50 mm Ø base plate (1 x plate)	
50 mm Ø brass non return valve (1 x valve)	
 50 mm Ø brass force head (1 x F/head) 	
• 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe	
(2mm thick) with 20mm brass gate valve (1 x air chamber)	
50 mm nipple (galv) (3 x nipple)	
50 mm T-piece (galv) (2 x T/piece)	
50 mm x 0.5 meter standpipe (galv) (1 x pipe)	
 40 mm male adaptor (nylon) (1 x adaptor) 	
 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 	
• 50 mm male bend (galv) (2 x bend)	
40 mm male bend (galv) (1 x bend)	
40 mm pipe clamp (2 x clamp)	
40 mm LDPE pipe (30 x meter)	
4.1.10.7 Construction of concrete reservoir with drinking	
trough around (1 x reservoir and 1 trough)	
(approximately 5m away from the windmill)	
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1	
m, wall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall	
and floor should be reinforced horizontally and vertically.	
Reservoir should be supplied with inlet and outlet.	
The developer to the control of the	
The drinking trough wall should be cast simultaneously with the	
first lift of the reservoir wall. The trough should have a wall that is	
150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall	
to inner face of trough wall) should be 625mm.	
The steel plate to cover the float valve in the drinking trough sho	
included.	
Provide concrete test cube results (10 x test cube)	
(, , , , , , , , , , , , , , , , , , ,	

1	444000
	4.1.10.8 Construction of new apron around reservoir (1 x apro
	Three (3) meter apron should be constructed around the existing
	reservoir.
	Inner circumference apron: 23 meters
	Outer circumference of apron: 42 meters
	Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2
	m (50mm)]
	Width of apron: 3 meter
	Size of apron: 96 m ²
	Mesh type: mesh 245
	Concrete strength: 30 MPa
	Construction material: concrete
	Excavate 450 mm and backfill with G5 material compacted to
	93% MOD AASHTO
	Provide concrete test cube results (2 x test cube)
1	4.1.10.9 Inlet pipe fittings (40 mm)
	2.5 meter x 40 mm standpipe (galv) (1 x pipe)
	0.3 meter x 40 mm standpipe (galv) (1 x pipe)
	40 mm bend (galv) (3 x bend)
	40 mm male adaptor (galv) (2 x adaptor)
	40 mm pipe clamp for LDPE pipe (1 x clamp)
-	4.1.10.10 Outlet pipe fittings (40 mm)
	40 mm outlet screen (stainless steel) (1 x screen)
	0.5 meter x 40 mm standpipe (galv) (1 x pipe)
	40 mm brass gate valve (brass) (1 x valve)
•	40 mm bend (galv) (1 x bend)
•	40 mm float valve (1 x valve)
•	40 mm T- piece (1 x T/piece)
•	40 mm nipple (galv) (1 x nipple)
	40 mm x 32 mm reducing bush (galv) (1 x R/bush)
0	32 mm male adaptor (1 x adaptor)

4.1.10.11Supply and installation of concrete casted drinking	
troughs (2 x trough)	
(approximately 120 m away from the reservoir)	
Drinking troughs specifications	
Concrete casted drinking troughs with cover to protect ball valve	
Size: length 2.4 meter x width 0.65 meter x depth 0.56 meter	
Capacity : 400 liters per trough	
4.1.10.12 Slab specification for drinking troughs (2 x slab)	
Concrete strength: 30 MPa	
Construction material: concrete	
Backfilling: G5 material	
Slab size: 9 meter x 7 meter x 0.15 meter	
Size: 62 m ² (9.45 m ³ concrete)	
Mesh type: mesh 245	
Excavation depth: 450 mm	
Provide concrete test cube results for slab (2 x test cube)	
4.1.10.13 The trench specification (240 m)	
Size: The pipe should be buried in a trench of 0.5m deep with the	
width of 0.3m	
4.1.10.14 Fittings for troughs	
32 mm inserts T-piece (nylon) (4 x T/piece)	
32 mm male adaptor (nylon) (2 x adaptor)	
32 mm x 0.8m standpipe (2 x pipe)	
32 mm nipple (galv) (2 x nipple)	
32 mm bend (galv) (2 x bend)	
32 mm M&F bend (2 x bend)	
32 mm brass gate valve (2 x valve)	
32 mm ball valve (2 x valve)	
 32 mm float valve (control water level) (2 x valve) 	
32 mm clamp (wire type) (24 x clamp)	
32 mm class 3 LDPE pipe (300 x meter)	
Thread tape (20 x roll)	

4.1.11 Dikhing (\$ 27°18' 31.3"; E 23° 44' 18.8")	
4.1.11.1 Supply and installation of windmill	
(Includes all equipment, materials, transport and labour	required)
Install 9 m high windmill tower with a 3 m Ø wheel with a	gearbox,
tail brake system, fork rod, bucket rod (pitman), wood	
meter and force head (1 x windmill)	
Windmill make:	
Windmill model:	
50mm Ø x 3.0m Galvanized medium screwed/soc	eket pipe
SABS (8 x pipe)	
 16 mm Ø x 3.0m Electro plated pump rods with so 	ocks and
protectors (9 x rod)	
 12-month maintenance plan (1 x windmill) 	
 Dismantle of old windmill and removal of pipes and r 	ods (1 x
windmill	
4.1.11.2 Borehole specification (Pump depth = 24 me	ters)
Borehole depth: 62 m	
Water level: Before test: 3	
After test: 17.9	
Delivery:1500 l/h	
Water abstraction limit at 60 % of delivery: 900 l/h	
4.1.11.3 Deep-water cylinder diameter 60 mm tube len	gth 550
mm (1 x cylinder)	
Cylinder make:	
Cylinder model:	
Cylinder size: 64 mm	
Specify delivery of cylinder:770 Liters/hour	
Total head : ± 20 meters	
4.1.11.4 Windmill tower foundation	
Concrete strength: 30 MPa	
Size: according to the windmill manufacture's specification	n
Provide concrete test cube results (2 x test cube)	

	4	.1.11.5 Supporting concrete block around casing (0.09m³)	
	C	oncrete strength: 30 MPa	
	C	onstruction material: concrete	
	S	ize: 600mm (height) x 400mm (wide) x 400mm (length)	
	P	rovide concrete test cube results (2 x test cube)	
	4.	1.11.6 Fittings from windmill to reservoir	+
	•	50 mm Ø brass foot valves (strainer) (1 x valve)	
	•	50 mm Ø base plate (1 x plate)	
	•	50 mm Ø brass non return valve (1 x valve)	
	•	50 mm Ø brass force head (1 x F/head)	
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe	
		(2mm thick) with 20mm brass gate valve (1 x air chamber)	
	•	50 mm nipple (galv) (3 x nipple)	
	•	50 mm T-piece (galv) (2 x T/piece)	
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)	
	•	40 mm male adaptor (nylon) (1 x adaptor)	
	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)	
	•	50 mm male bend (galv) (2 x bend)	
	•	40 mm male bend (galv) (1 x bend)	
	•	40 mm pipe clamp (2 x clamp)	
	•	40 mm LDPE pipe (30 x meter)	
-	-		1

4.1.11.7 Repair and sealing of existing reservoir and trougl reservoir and 1 x trough)

The existing reservoir and drinking trough around the reservoir need to be cleaned and the cracks to be repaired inside and outside with sand/cement filler. The inside of the reservoir and drinking trough needs to be sealed with geotextiles matt (90-100 g/m^2) and polymer anionic bitumen emulsion sealant.

Specification type of matt:

Specification type of sealing:

Coating layers recommended:

The sealing matt should go over the wall of the reservoir down the outside wall for 30 cm and where the matt is joined the overlap should be 30 cm. Where the inner wall meets the floor the overlap should be 30 cm.

Method of application: Paint area to be seal with sealant and apply the matt to the area and paint the matt 4 x coats with sealant

Size of reservoir

Diameter: 5.09 meter Height: 2.9 meters

Circumference: 16.2 meters

Size of drinking trough around reservoir

Width: 33 cm Depth: 45 cm

Length from reservoir wall to trough: 35 cm

	1	4.1.11.8 Construction of new apron around reservoir (1 x apro
		Three (3) meter apron should be constructed around the existing
		reservoir.
	1	nner circumference apron: 23 meters
	C	Outer circumference of apron: 42 meters
	Т	hickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m
	- 1	50mm)]
	V	Vidth of apron: 3 meter
	S	size of apron: 96 m²
	.N	lesh type: mesh 245
	C	concrete strength: 30 MPa
	С	construction material: concrete
	E	xcavate 450 mm and backfilling with G5 material compacted to
	1	3% MOD AASHTO
	Pi	rovide concrete test cube results (2 x test cube)
	4.	1.11.9 Inlet pipe fittings (40 mm)
		2.5 meter x 40 mm standpipe (galv) (1 x pipe)
	•	0.3 meter x 40 mm standpipe (galv) (1 x pipe)
	•	40 mm bend (galv) (3 x bend)
	•	40 mm male adaptor (galv) (2 x adaptor)
-	٠	40 mm pipe clamp for LDPE pipe (1 x clamp)
Ī	4.	1.11.10 Outlet pipe fittings (40 mm)
	•	40 mm outlet screen (stainless steel) (1 x screen)
	0	0.5 meter x 40 mm standpipe (galv) (1 x pipe)
	0	40 mm brass gate valve (brass) (1 x valve)
	•	40 mm bend (galv) (1 x bend)
	•	40 mm float valve (1 x valve)
	•	40 mm nipple (galv) (1 x nipple)
	•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)
lis	•	32 mm male adaptor (1 x adaptor)
_		

	4 1 12 Gasaburada wada 0 (C 27840) 40 47 F 000 041 40 000	 	
	4.1.12 Gasehunelo wyk 9 (S 27°12' 48.4"; E 23° 34' 46.6")		
	4.1.12.1 Supply and installation of windmill		
	(Includes all equipment, materials, transport and labour required,		
	Install 9 m high windmill tower with a 2.5 m Ø wheel with a		
	gearbox, tail brake system, fork rod, bucket rod (pitman), wood		
	rod x 3 meter and force head (1 x windmill		
	Windmill make:		
	Windmill model:		
	50mm Ø x 3.0m Galvanized medium screwed/socket pipe		
	SABS (4 x pipe)		
	 16 mm Ø x 3.0m Electro plated pump rods with socks and 		
	protectors (5 x rod)		
	12-month maintenance plan (1 x windmill)		
	 Dismantle of old windmill and remove pipes and rods (1 x 		
	windmill)		
	4.1.12.2 Borehole specification (Pump depth = 10 meters)		
	Borehole depth: 20 m		
	Water level: Before test: 3 m		
	After test: 3.3 m		
	Delivery: 5000 l/h		
	Water abstraction limit at 60 % of delivery: 3000 I/h		
	4.1.12.3 Deep-water cylinder diameter 60 mm tube length		
-	550 mm (1 x cylinder)		
	Cylinder make:		
	Cylinder model:		
	Cylinder size:64 mm		
0.000	Specify delivery of cylinder:770 Liters/hour		
	Total head :± 10 meters		
	4.1.12.4 Windmill tower foundation		
(Concrete strength: 30 MPa		
S	Size: according to the windmill manufacture's specification		
F	Provide concrete test cube results (2 x test cube)		
-			1

4.1.12.5 Supporting concrete block around casing (0.09m³)	T		
Concrete strength: 30 MPa			
Construction material: concrete			
Size: 600mm (height) x 400mm (wide) x 400mm (length)			
Provide concrete test cube results (2 x test cube)			
4.1.12.6 Fittings from windmill to reservoir			-
 50 mm Ø brass foot valves (strainer) (1 x valve) 			
50 mm Ø base plate (1 x plate)			
 50 mm Ø brass non return valve (1 x valve) 			
 50 mm Ø brass force head (1 x F/head) 			
• 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe			
(2mm thick) with 20mm brass gate valve (1 x air chamber)			
• 50 mm nipple (galv) (3 x nipple)			
50 mm T-piece (galv) (2 x T/piece)			
 50 mm x 0.5 meter standpipe (galv) (1 x pipe) 			
 40 mm male adaptor (nylon) (1 x adaptor) 			
 50 mm x 40 mm reducing bush (nylon) (1 x R/bush) 			
50 mm male bend (galv) (2 x bend)			
40 mm male bend (galv) (1 x bend)			
40 mm pipe clamp (2 x clamp)			
40 mm LDPE pipe (30 x meter)			
4.1.12.7 Construction of concrete reservoir with drinking			
trough around (1 x reservoir and 1 x trough)			
(approximately 5m away from the windmill)			
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1			
m, wall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall			
and floor should be reinforced horizontally and vertically.			
Reservoir should be supplied with inlet and outlet.			
The drinking trough wall should be cast simultaneously with the			
first lift of the reservoir wall. The trough should have a wall that is			
150mm in width and 500mm high (inner face) and 700mm (outer			
face). The width of the trough (from outer face of reservoir wall		The second secon	
to inner face of trough wall) should be 625mm.			

	The steel plate to cover the float valve in the drinking trough sho included.	
	Provide concrete test cube results (10 x test cube)	
	4.1.12.8 Construction of new apron around reservoir (1 x apro	
	Three (3) meter apron should be constructed around the existing	
	reservoir.	
	Inner circumference apron: 23 meters	
	Outer circumference of apron: 42 meters	
	Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2	
	m (50mm)]	
	Width of apron: 3 meter	
	Size of apron: 96 m ²	
	Mesh type: mesh 245	
	Concrete strength: 30 MPa	
	Construction material: concrete	
	Excavate 450 mm and backfilling with G5 material compacted to	
	93% MOD AASHTO	
_	Provide concrete test cube results (2 x test cube)	
	4.1.12.9 Inlet pipe fittings (40 mm)	1
	2.5 meter x 40 mm standpipe (galv) (1 x pipe)	
5000	0.3 meter x 40 mm standpipe (galv) (1 x pipe)	
100	• 40 mm bend (galv) (3 x bend)	
•	40 mm male adaptor (galv) (2 x adaptor)	
	40 mm pipe clamp for LDPE pipe (1 x clamp)	
4	4.1.12.10 Outlet pipe fittings (40 mm)	1
•	40 mm outlet screen (stainless steel) (1 x screen)	
0	0.5 meter x 40 mm standpipe (galv) (1 x pipe)	
0	40 mm brass gate valve (brass) (1 x valve)	
0	40 mm float valve (1 x valve)	
0	40 mm T-piece (1 x T/piece)	
	40 mm bend (galv) (1 x bend)	
0	40 mm nipple (galv) (1 x nipple)	
•	40 mm x 32 mm reducing bush (galv) (1 x R/bush)	
D	32 mm male adaptor (1 x adaptor)	
-		

	4.1.12.11 Supply and installation of concrete casted drinkin	q	
	troughs (2 x trough)		
	(approximately 120 m away from the reservoir)		
	Drinking troughs specifications		
	Concrete casted drinking troughs with cover to protect ball valve	,	
	Size: length 2.4 meter x width 0.65 meter x depth 0.56 meter		
	Capacity: 400 liters per trough		
	4.1.12.12 Slab specification for drinking troughs (2 x slab)	-	
	Concrete strength: 30 MPa		
	Construction material: concrete		
	Backfilling: G5 material		
	Slab size: 9 meter x 7 meter x 0.15 meter		
	Size: 62 m ² (9.45 m ³ concrete)		
	Mesh type: mesh 245		
	Excavation depth: 450 mm		
	Provide concrete test cube results for slab (2 x test cube)		
	4.1.12.13 The trench specification (240 m)		
	Size: The pipe should be buried in a trench of 0.5m deep with the		
and and an owner	width of 0.3m		
	4.1.12.14 Fittings for troughs		
	 32 mm inserts T-piece (nylon) (4 x T/piece) 		
	 32 mm male adaptor (nylon) (2 x adaptor) 		
	 32 mm x 0.8m standpipe (2 x pipe) 		
	 32 mm nipple (galv) (2 x nipple) 		
	32 mm bend (galv) (2 x bend)		
	32 mm M&F bend (2 x bend)		
	32 mm brass gate valve (2 x valve)		
	32 mm ball valve (2 x valve)		
	 32 mm float valve (control water level) (2 x valve) 		
•	32 mm clamp (wire type) (24 x clamp)		
•	32 mm class 3 LDPE pipe (300 x meter)		
•	Thread tape (20 x roll)		

	14400	
	4.1.13 Gamammebe (S 26°58'47.7"; E 23°53'43.9")	
	4.1.13.1 Supply and installation of Windmill	
	(Includes all equipment, materials, transport and labour required)	
	Install 9 m high windmill tower with a 4.3 m Ø wheel with a	
	gearbox, tail brake system, fork rod, bucket rod (pitman), wood	
-	rod x 3 meter and force head (1 x windmill)	
	Windmill make:	
	Windmill model:	
	 50 mm Ø x 3.0m Galvanized medium screwed/socket pipe 	
	SABS (23 x pipe)	
	• 16 mm \varnothing x 3.0m Electro plated pump rods with socks and	
	protectors (26 x rod)	
	12-month maintenance plan	
	 Dismantle of old windmill and remove pipes and rods 	
	4.1.13.2 Borehole specification (Pump depth = 69 meters)	
	Borehole depth: 99 m	
	Water level: Before test: 30 m	
	After test: 60.1 m	
	Delivery: 1300 l/h	
	Water abstraction limit at 60 % of delivery: 780 l/h	
	4.1.13.3 Deep-water cylinder diameter 60 mm tube length	
	550 mm (1 x cylinder)	
(Cylinder make:	
(Cylinder model:	
(Cylinder size:64 mm	
0	Specify delivery of cylinder:770 Liters/ hour	
	Total head:± 69meters	
4	4.1.13.4 Windmill tower foundation	
(Concrete strength: 30 MPa	
5	Size: according to the windmill manufacture's specification	
F	Provide concrete test cube results (2 x test cube)	
4	.1.13.5 Supporting concrete block around casing (0.09m³)	
	Concrete strength: 30 MPa	
C	Construction material: concrete	
S	Size: 600mm (height) x 400mm (wide) x 400mm (length)	
_		

	P	rovide concrete test cube results (2 x test cube)	Ť	1		
	4	1.13.6 Fittings from windmill to reservoir				
	•	50 mm Ø brass foot valves (strainer) (1 x valve)				
	•	50 mm Ø base plate (1 x plate)				
	•	50 mm Ø brass non return valve (1 x valve)				
	•	50 mm Ø brass force head (1 x F/head)				
	•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe				
		(2mm thick) with 20mm brass gate valve (1 x air chamber)				
	•	50 mm nipple (galv) (3 x nipple)				
	•	50 mm T-piece (galv) (2 x T/piece)				
	•	50 mm x 0.5 meter standpipe (galv) (1 x pipe)				
	•	40 mm male adaptor (nylon) (1 x adaptor)				
-	•	50 mm x 40 mm reducing bush (nylon) (1 x R/bush)				
	•	50 mm male bend (galv) (2 x bend)				
	•	40 mm male bend (galv) (1 x bend)				
	•	40 mm pipe clamp (2 x clamp)				
	•	40 mm LDPE pipe (30 x meter)				
					1	- 1

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	4.1.13.7 Repair and sealing of existing reservoir and troug	gl		
	reservoir and 1 x trough)			
	The existing reservoir and drinking trough around the reservoir			
	need to be cleaned and the cracks to be repaired inside and			
	outside with sand/cement filler. The inside of the reservoir and			
	drinking trough needs to be sealed with geotextiles matt (90-100			
	g/m²) and polymer anionic bitumen emulsion sealant.			
	Specification type of matt:			
	Specification type of sealing:			
	Coating layers recommended:			
	The sealing matt should go over the wall of the reservoir down			
	the outside wall for 30 cm and where the matt is joined the			
	overlap should be 30 cm. Where the inner wall meets the floor			
	the overlap should be 30 cm.			
	Method of application: Paint area to be seal with sealant and			
	apply the matt to the area and paint the matt 4 x coats with			
	sealant			
-	Size of reservoir			
-	Diameter: 5.09 meter			
	Height: 2.4 meters			
	Circumference: 16 meters			
	Size of drinking trough around reservoir			
	Width: 2.6 cm			
	Depth: 50 cm			
	Length from reservoir wall to trough: 60 cm			
	4.1.13.8 Repair of apron around existing reservoir (1 x apron)			_
	Seven (7) m length and 2.6 meter width of apron should be			
	repaired (20 m²)			
	The old apron was constructed out of pieces of marble blocks.			
	Therefore, the blocks should be repacked on the 20 m² and new			
	grout needs to place. The rest of the apron needs to be re-			
	grouted.			
_				

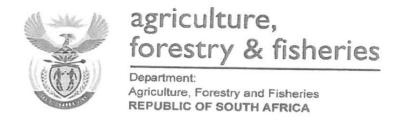
Bidders	must	ensure	that	the	following	documentation	aro	oomenlete d		
submitte	d as fa	ilure will	resu	It in t	the bid beir	ng disqualified:	are	completed,	signed	and
					wid bell	ig disqualified.				

(1)	I erms of	Reference/Specification;
/::\	00000	promounori,

- (ii) SBD 3 form;
- (iii) SBD 4 form;
- (iv) SBD 6.1 form;
- (v) SBD 6.2 form;
- (vi) Proof of B-BBEE Status Level of contributor
- (vii) SBD 8 form;
- (viii) SBD 9 form;
- (ix) Company registration document;
- (x) Copies of ID documents for directors;
- (xi) The bidder should have successfully executed a minimum of three years contracts on equipping of boreholes with windmills and or repairing of windmills and construction of reservoirs (two contracts of windmills and one of reservoir). The bidder is expected to submit proof by means of completion letters from where the service was provided.
- (xii) The service provider must submit a detailed implementation plan together with the bid documents to show how the work will be completed within a period of seven months. The service provider should also submit the cost breakdown per borehole. Failure to submit these documents will lead to the bid to be viewed as invalid and therefore rejected. (See Annexure A for an implementation plan example).

I/we, the undersigned, declare that the information furnished is true and correct and warrants that he/she is duly authorised to sign on behalf of the company.

NAME AND CAPACITY:	
SIGNATURE OF BIDDER	DATE
NAME OF COMPANY:	



SPECIFICATION FOR EQUIPPING OF NEW WINDMILL AND CONSTRUCTION/ REPAIR OF RESERVIOR AND DRINKING TROUGHS IN NORTHERN CAPE

2019/2020 FINANCIAL YEAR

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1. PRELIMINARY AND GENERAL

DE	SCRIPTION	Qty	Unit	Price/Unit VAT incl	Total Price
Site	e establishment				
•	Office and storage shed	1	Sum		
•	Ablution and latrine facilities	2	Sum		
•	Provide water and power				
Occ	cupational health and safety measures				
•	Cost of health and safety measures required in terms of the Construction Regulations (2003) of the Occupational Health and Safety act	1	Sum		
•	Compilation and maintenance of a Health and Safety Plan, including Risk Assessments, Safe Work Procedures and Method Statements	1	Sum		
•	Compilation and maintenance of a Health and Safety File	1	Sum		

2. PROJECTS SPECIFICATIONS

2.1 Thamoyanche (S 27° 19' 05. 3"; E 23° 37' 09.7")

	DESCRIPTION		Qty	Unit	Price/Un	Total Pr
					VAT Incl	VAT Inc
1.	WINDMILL I	LOCATION: S 27° 19' 05. 3"; E 23° 37	09.7"	-1		
	Supply and installation of Windmill (Includes all equipment, materials, transpol Install 9 m high windmill tower with a 2.5 m system, fork rod, bucket rod (pitman), wood Windmill make: Windmill model:	n Ø wheel with a gearbox, tail brake rod x 3 meter and force head.	1	Windmill		
	50mm Ø x 3.0m Galvanized medium sc	rewed/socket pipe SABS	9	Pipe		
	 16 mm Ø x 3.0m Electro plated pump ro 	ds with socks and protectors	12	Rod		
	12 month maintenance plan		1	Windmill		
	Borehole specification (Pump depth = 27 me	iters)				
	Borehole depth	70 m				
	Water level	Before test: 17.5 m After test: 17.8 m				
	Delivery	7400 l/h				
	Water abstraction limit at 60 % of delivery	4440 l/h				
	 Deep water cylinder diameter 60 mm tub 	e length 550 mm	1	Cylinder		

	Cylinder make:	T	T	
	Cylinder model:			
	Cylinder size:64 mm	1		
	Specify delivery of cylinder:770 Liters/hour			
	Total head :± 27 meters			
1	Windmill tower foundation			_
- 1	Concrete strength: 30 Mpa	-	m ³	
1	Size: according to the windmill manufacture's specification			
F	Provide concrete test cube results	2	Test cube	
	Supporting concrete block around casing	0.09	m³	
1	Concrete strength: 30 Mpa			
(Construction material: concrete			
5	Size: 600mm (Height) x 400 mm (Wide) x 400 mm (Length)			
	Provide concrete test cube results	2	Test cube	
F	ittings from windmill to reservoir			
•	50 mm Ø brass foot valves (strainer)	1	Valve	
•	50 mm Ø base plate	1	Plate	-
•	50 mm Ø brass non return valve	1	Valve	+
	50 mm Ø brass force head	1	F-head	+
•	50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20	1	Air	-
	mm brass gate valve		chamber	
•	50 mm nipple (galv)	3	Nipple	
•	50 mm T-piece (galv)	2	T/piece	
•	50 mm x 0.5 meter standpipe (galv)	1	Pipe	-
	40 mm male adaptor (nylon)	1	Adaptor	
	50 mm x 40 mm reducing bush (nylon)	1	R/bush	+
•	50 mm male bend (galv)	2	Bend	+-
	40 mm male bend (galv)	1	Bend	-
	40 mm pipe clamp	2	Clamp	-
	40 mm LDPE pipe	250	Meter	+
	RESERVOIR WITH DRINKING TROUGH LOCAT		Metel	
Re	epair and sealing of existing reservoir and drinking trough around.		Reservoir	T
1	e existing reservoir and drinking trough around needs to be cleaned and the	1	1 tooci von	
1	acks to be repaired inside and outside with sand/cement filler. The inside of the			
1	servoir and trough needs to be sealed with geotextiles matt (90-100 g/m²) and			
	ymer anionic bitumen emulsion sealant.			
Sp	ecification type of matt:	1	Drinking	
Sp	ecification type of sealing:		trough	
Co	ating layers recommended :			

The sealing matt should go over the wall of the reservoir down the wall for 30 cm and where the matt is joined the overlap should be			
Where the inner wall meets the floor the overlap should be 30 cm.	30 cm.		
Method of application : Paint area to be seal with sealant and a	nnly the		
matt to the area and paint the matt 4 x coats with sealant	pply the		
para in make 1 x oodio will occident			
The concrete manhole cover to protect the float valve should be included	d		
Size of reservoir			
Diameter: 5.3 meter			
Height: 2.1 meters			
Circumference: 16.8 meters			
Wall thickness: 15 cm			
Size of drinking trough around reservoir			
Width: 33 cm			
Depth: 45 cm			
Length from reservoir wall to trough: 35 cm			
Construction of new apron around reservoir:			
Three (3) meter apron should be constructed around the existing reservoi	ir 1	Anron	
Inner circumference apron : 23 meters	" '	Apron	
Outer circumference of apron : 42 meters			
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm	n)7		
Width of apron : 3 meter	72		
Size of apron: 96 m ²			
Mesh type : mesh 245			
Concrete strength: 30 Mpa			
Construction material: concrete			
Excavate 450mm and backfill with G5 material compacted to 93% MOD A	ASHTO		
Provide concrete test cube results	2	Test cube	
Inlet pipe fittings (40 mm)			
2.5 meter x 40 mm standpipe (galv)	1	Pipe	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm bend (galv)	3	Bend	
40 mm male adaptor (galv)	2	Adaptor	
40 mm pipe clamp for LDPE pipe	1	Clamp	
Outlet pipe fittings (40 mm)			
40 mm outlet screen (stainless steel)	1	Screen	
0.5 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm brass gate valve (brass)	1	Valve	
40 mm float valve	1	Valve	
40 mm bend (galv)	1	Bend	
40 mm nipple (galv)	1	Nipple	

 40 mm x 32 mm reducing bush (galv) 	1	R/Bush
32 mm male adaptor	1	Adaptor
RETENTION FEE (10%)		- Caspio
TOTAL		

2.2 Maketlele (S 26° 20' 51.0"; E 23° 40' 09.1")

DESCRIPTION		Qty	Unit	Price/Ur	Total Price
				VAT Inc	VAT Incl
WINDMILL	LOCATION: S 26° 20' 51.0"; E 23	° 40' 0	9.1")		
Supply and installation of Windmill					
(Includes all equipment, materials , transpor					
Install a 2.5m Ø wheel with a gearbox, tail I		1 1	Windmill		
(pitman), wood rod x 3 meter and force head					
Windmill make:					
Windmill model:					
50 mm Ø x 3.0m Galvanized medium so		5	Pipe		
16 mm Ø x 3.0m Electro plated pump ro	ds with socks and protectors	8	Rod		
12 month maintenance plan		1	Windmill		
 Dismantle old windmill head and gearbo 	X	1	Head &		
			gearbox		
Borehole specification (Pump depth = 15 me	eters)				
Borehole depth	98.5 m				
Water level	Before test : 3 m				
	After test: 6.7 m				
Delivery	6500 l/h				
Water abstraction limit at 60 % of delivery	3900 l/h				
Deep-water cylinder diameter 60 mm tul		1	Cylinder		
Cylinder make:					
Cylinder model:					
Cylinder size:64 mm Specify delivery of cylinder:770 L	Manual II.				
Total head:± 12meters	iters/ nour				
Fittings from windmill to reservoir					
50 mm Ø brass foot valves (strainer)		1	Make		
50 mm Ø base plate		-	Valve		
50 mm Ø brass non return valve		1	Plate		
50 mm Ø brass force head		-	Valve		
50 mm Ø inlet air chamber (150mm Ø x 90	00mm steel nine (2mm thick) with	-	F/head Air		
20mm brass gate valve	Wall		chamber		
50 mm nipple (galv)			Nipple		
50 mm T-piece (galv)		_	T/piece		
50 mm x 0.5 meter standpipe (galv)			Pipe		

40 mm male adaptor (nylon)	1	Adaptor		
50 mm x 40 mm reducing bush (nylon)	1	R/bush		
50 mm male bend (galv)	2	Bend		
40 mm male bend (galv)	1	Bend		
40 mm pipe clamp	2	Clamp		_
40 mm LDPE pipe	30	<u> </u>		
RESERVOIR WITH DRINKING TROUGH LOCATION: Approxim	nately s	5m away from t	he windm	oill
Construction of concrete reservoir with drinking trough around	T			
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1 m, wal	1			
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be				
reinforced horizontally and vertically. Reservoir should be supplied with inlet	t			
and outlet.				
The drinking trough wall should be cast simultaneously with the first lift of the		Reservoir		
reservoir wall. The trough should have a wall that is 150mm in width and		100 may 100 ma		
500mm high (inner face) and 700mm (outer face). The width of the trough				
(from outer face of reservoir wall to inner face of trough wall) should be				
625mm.				
The steel plate to cover the float valve in the drinking trough should be				
included.				
Provide concrete test cube results	10			
Construction of new apron around reservoir:			1	
Three (3) meter apron should be constructed around the existing reservoir				
Inner circumference apron : 23 meters				
Outer circumference of apron : 42 meters				
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]	1	Apron		
Width of apron: 3 meter				
Size of apron: 96 m ²				
Mesh type: mesh 245				
Concrete strength: 30 Mpa				
Construction material: concrete				
Excavate 450mm and backfill with G5 material compacted to 93% MOD				
ASHTO				
Provide concrete test cube results	2	Apron		
Inlet pipe fittings (40 mm)				
2.5 meter x 40 mm standpipe (galv)	1	Pipe		
0.3 meter x 40 mm standpipe (galv)	1	Pipe		
40 mm bend (galv)	3	Bend		
40 mm male adaptor (galv)	2	Adaptor		
40 mm pipe clamp for LDPE pipe	1	Clamp		
Outlet pipe fittings (40 mm)				
40 mm outlet screen (stainless steel)	1	Screen		
0.5 meter x 40 mm standpipe (galv)	1	Pipe		

TOTAL			_
RETENTION FEE (10%)			
32 mm male adaptor	1	Adaptor	
40 mm x 32 mm reducing bush (galv)	1	R/Bush	
40 mm nipple (galv)	1	Nipple	
40 mm bend (galv)	1	Bend	
40 mm float valve	1	Valve	
40 mm brass gate valve (brass)	1	Valve	

2.3 Cardington (S 27° 12' 49.6"; E 23° 30' 36.5")

	DESCRIPTION		Qty	Unit	Price/Unit	Tota
					VAT Incl	VAT
	WINDMILL	LOCATION: S 27° 12' 49.6"; E 23° 3	0' 36.5'	1		
	Supply and installation of Windmill					
	(Includes all equipment, materials, transport	•				
	Install 9 m high windmill tower with a 3.7 m	Ø wheel with a gearbox, tail brake	1	Windmill		
	system, fork rod, bucket rod (pitman), wood ro					
	Windmill make:					
-	Windmill model:					
1	50 mm Ø x 3.0m Galvanized medium scr		19	Pipe		
	16 mm Ø x 3.0m Electro plated pump rod	ls with socks and protectors	22	Rod		
-	12 month maintenance plan		1	Windmill		
	Borehole specification (Pump depth = 57 met	ters)				
	Borehole depth	110 m				
	Water level	Before test :11 m				
		After test: 50.1 m				
	Delivery	2000 l/hour				
	Water abstraction limit at 60 % of delivery	1200 I/hour				
	Deep-water cylinder diameter 60 mm tube		1	Cylinder		
	Cylinder make:	1				
	Cylinder model:					
	Cylinder size:64 mm					
	Specify delivery of cylinder average liters/o	day:770 Liters/day				
	Windmill tower foundation					
	Concrete strength: 30 Mpa		-	m ³		
_	Size: according to the windmill manufacture's s Provide concrete test cube results	specification				
			2	Test cube		
	Supporting concrete block around casing Concrete strength: 30 Mpa		0.09	m ³		
	Construction material: concrete					
	Size: 600mm (Height) x 400 mm (Wide) x 400	mm (Longth)				
_	(10/g/il) × 400 min (Wide) X 400	min (Lengur)				

Filting for the state of the st			1
Fittings from windmill to reservoir			
50 mm Ø brass foot valves (strainer)	1	Valve	
50 mm Ø base plate	1	Plate	
50 mm Ø brass non return valve	1	valve	
50 mm Ø brass force head	1	F-head	
 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mb brass gate valve 	m 1	Air	
50 mm nipple (galv)	-	chamber	
50 mm T-piece (galv)	3	Nipple	-
50 mm x 0.5 meter standpipe (galv)	2	T/piece	
40 mm male adaptor (nylon)	1	Pipe	-
50 mm x 40 mm reducing bush (nylon)	1	Adaptor	-
50 mm male bend (galv)	1	R/bush	
40 mm male bend (galv)	2	Bend	
40 mm pipe clamp	1	Bend	
	2	Clamp	
TO THIN EDI E PIPE	30	Meter	
RESERVOIR WITH DRINKING TROUGH LOCATION: Approximate	ely 5m a	way from the wil	ndmill
Construction of concrete reservoir with drinking trough around		Reservoir	
CIFCUIAL TEINTORCED CONCRETE RESERVOIR diameter 4.5 m height 0.4 m	1 4		
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1 m, wall thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and	1		
		Drinking	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and putlet.		Drinking	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the	1	Drinking trough	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and outlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm			
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face			
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and outlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm.			
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face	1	trough	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results			
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir:	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir:	1	trough	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir oner circumference apron: 23 meters	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir oner circumference apron: 23 meters Future circumference of apron: 42 meters Shickness of apron: 50 mm & 100 mm [for 1 m (100mm) and 2 m (50mm)]	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir inner circumference apron: 23 meters Outer circumference of apron: 42 meters Hickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter ize of apron: 96 m²	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters Futurer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Additionally and vertically. The wall and floor should be supplied with inlet and pounds.	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and butlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters Futurer circumference of apron: 42 meters Shickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter ize of apron: 96 m² Tesh type: mesh 245 The provide concrete is a simultaneously with the first lift of the supplied with inlet and south the supplied with inlet and south the first lift of the servoir of the servoir of the trough (from outer face of the servoir of the	1 10	trough Test cube	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be reinforced horizontally and vertically. Reservoir should be supplied with inlet and putlet. The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir onner circumference apron: 23 meters Futurer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Additionally indicated appron: 96 m² The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be included. The steel plate to cover the float valve in the drinking trough should be cast simultaneously with the first lift of the security in the drinking trough should be secured to the steel plate to the steel pl	1 10	trough Test cube	

2

Test cube

Provide concrete test cube results

2.5 meter x 40 mm standpipe (galv)	1	Pipe	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm bend (galv)	3	Bend	-
40 mm male adaptor (galv)	2		
40 mm pipe clamp for LDPE pipe	1	Adaptor	
Outlet pipe fittings (40 mm)		Clamp	
40 mm outlet screen (stainless steel)	1		
0.5 meter x 40 mm standpipe (galv)	-	Screen	
40 mm brass gate valve (brass)	1	Pipe	
40 mm bend (galv)	1	Valve	
40 mm float valve	1	Bend	
40 mm T- piece	1	Valve	
	1	T/piece	
40 mm nipple (galv)	1	Nipple	
40 mm x 32 mm reducing bush (galv)	1	R/Bush	
32 mm male adaptor	1	Adaptor	
DRINKING TROUGHS: 1 ST LOCATION: Approximately 120 m			
2 ND LOCATION: Approximately 120 m a	away fro	m the reservoir	
Supply and installation of concrete casted drinking troughs	2	Trough	
Drinking troughs specifications			
Concrete casted drinking troughs with cover to protect ball valve			
Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter			
Capacity: 400 liters per trough			1
Slab specification for drinking troughs	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m ² (9.45 m ³ concrete)	2	Slab	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245	2	Slab Cube test	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm	2	Cube test	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab			
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification	2	Cube test	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m	2 240	Cube test Meter	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs	2 240	Cube test Meter T/piece	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs 32 mm inserts T-piece (nylon)	2 240 4 2	Cube test Meter T/piece Adaptor	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon)	2 240 4 2 2	Cube test Meter T/piece Adaptor Pipe	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon) 32 mm x 0.8m standpipe 32 mm nipple(galv)	2 240 4 2 2 2	Cube test Meter T/piece Adaptor Pipe Nipple	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs 32 mm inserts T-piece (nylon) 32 mm x 0.8m standpipe 32 mm nipple(galv) 32 mm bend (galv)	2 240 4 2 2 2 2	Cube test Meter T/piece Adaptor Pipe Nipple Bend	
Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m Fittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon) 32 mm x 0.8m standpipe 32 mm nipple(galv) 32 mm bend (galv)	2 240 4 2 2 2	Cube test Meter T/piece Adaptor Pipe Nipple	

32 mm float valve (control water level)	2	Valve	
32 mm clamp (wire type)	24	Clamp	
32 mm class 3 LDPE pipe	300	Meter	
Thread tape	20	Roll	
RETENTION FEE (10%)		1.0	
TOTAL			

2.4 Maruping (\$ 27° 21' 18.0"; E 23° 22' 49.5")

DESCRIPTION		Qty	Unit	Price/Ur	Total Price
WINDMILL	OCATION: (S 27° 21' 18.0"; E 23	° 20' 40) F")	VATING	AVI IIICI
Supply and installation of Windmill		20 48	9.5")		
(Includes all equipment, materials, transport Install 9 m high windmill tower with a 2.5m g system, fork rod, bucket rod (pitman), wood windmill make:	wheel with a gearbox, tail brake rod x 3 meter and force head.	1	Windmill		
Windmill model:					
50 mm Ø x 3.0m Galvanized medium sc		13	Pipe		
16 mm Ø x 3.0m Electro plated pump ro	ds with socks and protectors	17	Rod		
12 month maintenance plan		1	Windmill		
Borehole specification (Pump depth = 39 me	eters)				
Borehole depth	92.5 meters				
Water level	Before test : 31.2 m After test : 31.3 m				
Delivery	6 400 l/h				
Water abstraction limit at 60 % of delivery	3 840 l/h				
Deep-water cylinder diameter 60 mm tub Cylinder make: Cylinder model:		1	Cylinder		
Cylinder size:64 mm Specify delivery of cylinder:770 L Total head:± 35meters					
Windmill tower foundation				-	
Concrete strength: 30 Mpa		_	m ³		
Size: according to the windmill manufacture's	specification				
Provide concrete test cube results	-	2	Test cube		
Supporting concrete block around casing		0.09	m ³		
Concrete strength: 30 Mpa					
Construction material: concrete					
Size: 600mm (Height) x 400 mm (Wide) x 400	mm (Length)				
Provide concrete test cube results		2	Test cube		

There is a restriction to teach you				
50 mm Ø brass foot valves (strainer)	1	Valve		
50 mm Ø base plate	1	Plate		
50 mm Ø brass non return valve	1	Valve		
50 mm Ø brass force head	1	F/head		
• 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with	1	Air		
20 mm brass gate valve		chamber		
50 mm nipple (galv)	3	Nipple		
50 mm T-piece (galv)	2	T/piece	-	
50 mm x 0.5 meter standpipe (galv)	1	Pipe		
40 mm male adaptor (nylon)	1	Adaptor		
50 mm x 40 mm reducing bush (nylon)	1	R/bush		
50 mm male bend (galv)	2	Bend	-	
40 mm male bend (galv)	1	Bend		
40 mm pipe clamp	2			
40 mm LDPE pipe	30	Clamp	1	
RESERVOIR WITH DRINKING TROUGH LOCATION: Approxima		Meter	<u> </u>	
Construction of concrete reservoir with drinking trough around	itely 5m	away trom the	e windmill	
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1 m, wall				
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be				
reinforced horizontally and vertically. Reservoir should be supplied with inlet				
and outlet.	1			
and dation.		Reservoir	1 1	
		1100011011	1	
The drinking trough wall should be east simultaneous to the fortist of		T TOOCH YOU		
		1 toodi you		
reservoir wall. The trough should have a wall that is 150mm in width and		, toodivon		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough		, toservon		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be		, toodivon		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm.		, toodings		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be		, toosivon		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included.	10	Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results	10			
500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir:	10			
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir.	10			
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be notuded. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters	10			
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters	10	Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. nner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m (50mm)]				
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m (50mm)] Length of apron: 3 meter		Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m (50mm)] Length of apron: 3 meter Size of apron: 96 m ²		Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m (50mm)] Length of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245		Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100mm [for 1 m (100mm) and 2 m (50mm)] Length of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 Mpa		Test cube		
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough		Test cube		

Fittings from windmill to reservoir

	Provide concrete test cube results	2	Test cube		
ı	Inlet pipe fittings(40 mm)				
-	2.5 meter x 40 mm standpipe (galv)	1	Pipe		
-	0.3 meter x 40 mm standpipe (galv)	1	Pipe		
-	40 mm bend (galv)	3	Bend		
-	40 mm male adaptor (galv)	2	Adaptor		
1	40 mm pipe clamp for LDPE pipe	1	Clamp		
1	Outlet pipe fittings(40 mm)				1
1	40 mm outlet screen (stainless steel)	1	Screen		
	0.5 meter x 40 mm standpipe (galv)	1	Pipe		
	40 mm brass gate valve (brass)	1	Valve		
L	40 mm bend (galv)	1	Bend		
	40 mm nipple (galv)	1	Nipple		
	40 mm float valve	1	Valve		
	40 mm T-piece	1	T/piece		+
	40 mm x 32 mm reducing bush (galv)	1	R/Bush		-
-	32 mm male adaptor	1	Adaptor		
	DRINKING TROUGHS: 1ST LOCATION: Approximately 120	_1		n role	
	2 ND LOCATION: Approximately 120 n				
,	Supply and installation of concrete casted drinking troughs	2	1	UII	1
. 8					
	Drinking troughs specifications	2	Trough		
Ī	Drinking troughs specifications	2	rrough		
[Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve	2	Hough		
(Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter	2	Hough		
1 0	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough				
1 0	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter	2	Slab		
1 3 0	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs				
1 0 0	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa				
1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material				
1 0 0 0 0 E	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter				
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	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m 2 (9.45 m 3 concrete) Mesh type: mesh 245	2	Slab		
I C S C C E S S N E P	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m 2 (9.45 m 3 concrete) Mesh type: mesh 245 Excavation depth: 450 mm	2	Slab Cube test		
	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m ² (9.45 m ³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification	2	Slab		
	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m 2 (9.45 m 3 concrete) Mesh type: mesh 245 Excavation depth: 450 mm	2	Slab Cube test		
1 0 0 0 E S S M E P T S 0.	Drinking troughs specifications Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m 2 (9.45 m 3 concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of	2	Slab Cube test		
() () () () () () () () () ()	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m 2 (9.45 m 3 concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of .3m ittings for troughs	2 2 240	Slab Cube test Meter		
1 0 8 0 B S S M E P T S 0. Fi	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m ² (9.45 m ³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of .3m ittings for troughs 32 mm inserts T-piece (nylon)	2 240	Slab Cube test Meter T/piece		
U S O E S S M E P T S O. Fi	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of 3m ittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon)	2 2 240 4 2	Slab Cube test Meter T/piece Adaptor		
U S S S N E P T S O. Fi	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m ² (9.45 m ³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of .3m ittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon) 32 mm x 0.8 m standpipe	2 2 240 4 2 2	Cube test Meter T/piece Adaptor Pipe		
1 0 0 0 E S S M E P T S 0.	Concrete casted drinking troughs with cover to protect ball valve Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 Mpa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification Size: the pipe should be buried in a trench of 0.5 m deep with the width of 3m ittings for troughs 32 mm inserts T-piece (nylon) 32 mm male adaptor (nylon)	2 2 240 4 2	Slab Cube test Meter T/piece Adaptor		

 32 mm brass gate valve 	2	Valve	
32 mm ball valve	2	Valve	
32 mm float valve (control water level)	2	Valve	
32 mm clamp (wire type)	24	Clamp	
32 mm class 3 LDPE pipe	300	Meter	
Thread tape	20	Roll	
RETENTION FEE (10%)			
TOTAL			

2.5 Metsimantsi Wyk 7 (S 27° 00' 23.9"; E 23° 12' 39.3")

	DESCRIPTION		Qty	Unit	Price/Ur VAT Inc	Total Price
١.	WINDMILL LOCATION: S 27° 00' 23.9"; E 23° 12' 39.3"					A Miller
Install 9 m high windmill tower with a 2.5 m Ø wh system, fork rod, bucket rod (pitman), wood rod or	(Includes all equipment, materials, transport and labour required) Install 9 m high windmill tower with a 2.5 m Ø wheel with a gearbox, tail brake system, fork rod, bucket rod (pitman), wood rod x 3 meter and force head. Windmill make:		1	Windmill		
		4	Pipe			
f	12 month maintenance plan	ous with socks and protectors	7	Rod		
+			1	Windmill		
1	Dismantle of old windmill and removed pipes and rods		1	Windmill		
	Borehole specification (Pump depth = 12 meters)					
	Borehole depth	19.1 m				
	Water level	Before test : 4 m After test : 4 m				
	Delivery	6 000 l/h				
L	Water abstraction limit at 60 % of delivery	3 600 l/h				
	Deep-water cylinder diameter 60 mm tul Cylinder make: Cylinder model: Cylinder size:64 mm Specify delivery of cylinder:770 Lite Total head:± 10meters		1	Cylinder		
١	Nindmill tower foundation					
(Concrete strength: 30 MPa		-	m ³		
Size: according to the windmill manufacture's s		specification				
	Provide concrete test cube results		2	Test cube		
8	Supporting concrete block around casing		0.09	m ³		
	Concrete strength: 30 MPa		2.00	THE STATE OF THE S		
	Construction material: concrete					

Fittings from windmill to reservoir 50 mm Ø brass foot valves (strainer) 50 mm Ø brass foot valves (strainer) 50 mm Ø brass force head 50 mm Ø brass force head 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve 50 mm nipple (galv) 50 mm 7-piece (galv) 50 mm x 0.5 meter standpipe (galv) 40 mm nale adaptor (nylon) 10 Adaptor 11 Adaptor 12 Typiece 13 Nipple 40 mm valom reducing bush (nylon) 14 Rybush 50 mm x 40mm reducing bush (nylon) 15 mm x 40mm reducing bush (nylon) 20 Bend 40 mm male bend (galv) 40 mm male bend (galv) 40 mm male bend (galv) 40 mm pipe clamp 40 mm LDPE pipe APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed Inner circumference apron: 23 meters Outer circumference apron: 23 meters Construction of new apron around the existing reservoir should be constructed Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² 10 Apron Apr	Provide concrete test cube results	2	Test cube			
So mm Ø base plate form Ø brass non return valve form Ø brass force head form M Ø brass force head form A Air forhander form M Adaptor form M Branch M Branch M Adaptor form M Branch M A	Fittings from windmill to reservoir	-	. 552 5055			
Somm Ø brass non return valve Somm Ø brass force head Somm Ø brass force head Somm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve Somm nipple (galv) Somm T-piece (galv) Somm x 0.5 meter standpipe (galv) Somm x 40mm reducing bush (nylon) Somm x 40mm reducing bush (nylon) Somm x 40mm reducing bush (nylon) Somm male bend (galv) Somm male deaptor (nylon) Somm m	50 mm Ø brass foot valves (strainer)	1	Valve			
So mm Ø brass force head In Fihead Thead Thead In Fihead In Air Chamber In Adaptor In Adaptor In Adaptor In Ribush In Bend	50 mm Ø base plate	1	Plate			
So mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 20mm brass gate valve So mm nipple (galv) So mm T-piece (galv) So mm x 0.5 meter standpipe (galv) Modular to the pipe (2mm thick) with 1	50 mm Ø brass non return valve	1	Valve			
20mm brass gate valve 50 mm nipple (galv) 50 mm T-piece (galv) 50 mm x 0.5 meter standpipe (galv) 40 mm male adaptor (nylon) 50 mm x 40mm reducing bush (nylon) 50 mm x 40mm reducing bush (nylon) 40 mm male bend (galv) 40 mm male bend (galv) 40 mm male bend (galv) 40 mm pipe clamp 40 mm LDPE pipe APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Culter circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Midth of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Trovide concrete test cube result 2 Test cube Fullet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm Ø brass force head	1	F/head			
* 50 mm T-piece (galv) * 50 mm x 0.5 meter standpipe (galv) * 40 mm male adaptor (nylon) * 50 mm x 40mm reducing bush (nylon) * 50 mm x 40mm reducing bush (nylon) * 50 mm x 40mm reducing bush (nylon) * 50 mm male bend (galv) * 40 mm male bend (galv) * 40 mm pipe clamp * 40 mm LDPE pipe * APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Duter circumference of apron: 42 meters Chickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Trovide concrete test cube result 2 Test cube Putlet pipe fittings (40 mm) 40 mm float valve (control water level)		1				
50 mm x 0.5 meter standpipe (galv) 40 mm male adaptor (nylon) 50 mm x 40mm reducing bush (nylon) 40 mm male bend (galv) 40 mm male bend (galv) 40 mm pipe clamp 40 mm LDPE pipe APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Outer circumference of apron: 42 meters Chickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Trovide concrete test cube result 2 Test cube Putlet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm nipple (galv)	3	Nipple			
40 mm male adaptor (nylon) 50 mm x 40mm reducing bush (nylon) 50 mm x 40mm reducing bush (nylon) 40 mm male bend (galv) 40 mm male bend (galv) 40 mm pipe clamp 40 mm LDPE pipe APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Cuter circumference of apron: 42 meters Cuter circumference of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Wesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Trovide concrete test cube result 2 Test cube Putlet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm T-piece (galv)	2	T/piece			
50 mm x 40mm reducing bush (nylon) 1 R/bush 50 mm male bend (galv) 40 mm male bend (galv) 1 Bend 40 mm pipe clamp 40 mm LDPE pipe 30 Meter APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir. Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Duter circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Midth of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Dutlet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm x 0.5 meter standpipe (galv)	1	Pipe			
- 50 mm male bend (galv) - 40 mm male bend (galv) - 40 mm pipe clamp - 40 mm pipe clamp - 40 mm LDPE pipe - APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed nner circumference apron: 23 meters Duter circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m ² Apron Alesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD Tovide concrete test cube result 2 Test cube Futilet pipe fittings (40 mm) 40 mm float valve (control water level)		1	Adaptor			
40 mm male bend (galv) 40 mm pipe clamp 2 Clamp 40 mm LDPE pipe 30 Meter APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Duter circumference of apron: 42 meters Chickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Dutlet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm x 40mm reducing bush (nylon)	1	R/bush			
40 mm pipe clamp 40 mm LDPE pipe APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level)	50 mm male bend (galv)	2	Bend			
APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m ² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level)	40 mm male bend (galv)	1	Bend			
APRON AROUND RESERVOIR WITH DRINKING TROUGH: Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve		2	Clamp			
Construction of new apron around existing reservoir: Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Duter circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result Dutlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve	40 mm LDPE pipe	30	Meter			
Three (3) meter apron around the existing reservoir should be constructed inner circumference apron: 23 meters Duter circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Midth of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Dutlet pipe fittings (40 mm) 40 mm float valve (control water level)						
Outer circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level)						
Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level)						
Width of apron: 3 meter Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Size of apron: 96 m² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Crovide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD ASHTO Crovide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve	31- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	Apron			
Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD CASHTO Crovide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
ASHTO Provide concrete test cube result Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 2 Test cube 1 Valve	-					
Provide concrete test cube result 2 Test cube Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve						
Outlet pipe fittings (40 mm) 40 mm float valve (control water level) 1 Valve	MONIO	2	Test cube			
·						
	Provide concrete test cube result		1			
	Provide concrete test cube result Outlet pipe fittings (40 mm)		Valve			

2.6 Metsimantsi Wyk 2 (S 26° 58' 44.9"; E 23° 09' 20.4")

DESCRIPTION		Qty	Unit	Price/Ur	Total Price
				VAT Inc	VAT Incl
	L LOCATION: S 26° 58' 44.9"; E 2	3° 09' 2	0.4"		
Supply and installation of Windmill (Includes all equipment, materials, transport Install 9 m high windmill tower with a 3.0m system, fork rod, bucket rod (pitman), wood Windmill make: Windmill model:	Ø wheel with a gearbox, tail braked rod x 3 meter and force head.	1	Windmill		
50 mm Ø x 3.0m Galvanized medium s	screwed/socket pipe SABS	15	Pipe	1	
16 mm Ø x 3.0m Electro plated pump r	ods with socks and protectors	18	Rod		
12 month maintenance plan		1	Windmill		
Dismantle of old windmill and removed	pipes and rods	1	Windmill		
Borehole specification (Pump depth = 45 r		+	TVINGITIII	-	
Borehole depth	53 m				
Water level Delivery Water abstraction limit at 60 % of delivery	Before test: 12.5 m After test: 37.2 m 2 000 l/h 1 200 l/h				
Cylinder make:	,		Cylinder		
Windmill tower foundation					
Concrete strength: 30 MPa Size: according to the windmill manufacture's	s specification	-	m ³		
Provide concrete test cube results		2	Test cube		
Supporting concrete block around casing Concrete strength: 30 MPa Construction material: concrete size: 600mm (Height) x 400 mm (Wide) x 40	00 mm (Length)	0.09	m³		
Provide concrete test cube results		2	Test cube		
ittings from windmill to reservoir		W-11-			
50 mm Ø brass foot valves (strainer) 50 mm Ø base plate		1	Valve		
50 mm Ø base plate		1	Plate		
50 mm Ø brass non return valve		1	Valve		
50 mm Ø brass force head		1	F/head		
50 mm Ø inlet air chamber (150mm Ø x 9 20mm brass gate valve	00mm steel pipe (2mm thick) with	1	Air chamber		
50 mm nipple (galv)	100	3	Nipple		

50 mm T-piece (galv)	2	T/piece	
50 mmx 0.5 meter standpipe (galv)	1		
40 mm male adaptor (nylon)	_	Pipe	
50 mm x 40 mm reducing bush (nylon)	1	Adaptor	
50 mm male bend (galv)	1	R/bush	
	2	Bend	
To min male bend (gaiv)	1	Bend	
• 40 mm pipe clamp	2	Clamp	
40 mm LDPE pipe REPAIR OF PESEVIOR WITH TROOP	30	Meter	
REPAIR OF RESEVIOR WITH TROURS Repair and sealing of existing reservoir and drinking trough around.	JGH:		
The existing reservoir and drinking trough around needs to be cleaned and			
the cracks to be repaired inside and outside with sand/cement filler. The inside			
of the reservoir and trough needs to be sealed with geotextiles matt (90-100			
g/m²) and polymer anionic bitumen emulsion sealant.			
Specification to a state			5
Specification type of matt:			
Specification type of sealing:			
Coating layers recommended :			
The sealing most should go support to small of the			
The sealing matt should go over the wall of the reservoir down the outside			
wall for 30 cm and where the matt is joined the overlap should be 30 cm.			
Where the inner wall meets the floor the overlap should be 30 cm.			
Method of application: Paint area to be seal with sealant and apply the			
matt to the area and paint the matt 4 x coats with sealant			
The concrete manhole cover to protect the float valve should be included			
Size of reservoir			
OLEC OF TESETYON			
Size of reservoir	1	Reservoir	
Diameter: 5.10 meter			
Height: 2.9 meters			
Circumference: 16.2 meters			
Chounterence, 10.2 meters		Drinking	
Size of drinking trough around reservoir	1	trough	
Width: 20 cm			
Depth: 50 cm			
Length from reservoir wall to trough: 35 cm			
Construction of new apron around existing reservoir:			
Three (3) meter apron should be constructed around the existing reservoir.			
Inner circumference apron : 23 meters			
Outer circumference of apron : 42 meters			
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]	1	Apron	
Width of apron : 3 meter			

Size of apron: 96 m ²						
Mesh type: mesh 245						
Concrete strength: 30 MPa						
Construction material: concrete						
Excavate 450mm and backfill with G5 material compacted to 93% MOD						
AASHTO						
Provide concrete test cube results	2	Apron				
Inlet pipe fittings (40 mm)		7.47.011				
2.5 meter x 40 mm standpipe (galv)	1	Pipe				
0.3 meter x 40 mm standpipe (galv)	1	Pipe				
40 mm bend (galv)	3	Bend				
40 mm male adaptor (galv)	2	Adaptor				
40 mm pipe clamp for LDPE pipe	1	Clamp	1			
Outlet pipe fittings (40 mm)	<u> </u>	Jianip				
40 mm outlet screen (stainless steel)	1	Screen				
0.5 meter x 40 mm standpipe (galv)	1	Pipe				
40 mm brass gate valve (brass)	1	Valve				
40 mm bend (galv)	1	Bend		-		
40 mm float valve	1					
40 mm T-piece	-	Valve		-		
40 mm nipple (galv)	1	T/piece				
40 mm x 32 mm reducing bush (galv)	1	Nipple				
32 mm male adaptor	1	R/Bush				
·	1	Adaptor		-		
DRINKING TROUGHS: 1 ST LOCATION: Approximately 120 m away from the reservoir 2 ND LOCATION: Approximately 120 m away from the reservoir						
Supply and installation of concrete casted drinking troughs	2	1				
Drinking troughs specifications	2	Trough				
Concrete casted drinking troughs with cover to protect ball valve						
Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter						
	1					
Capacity : 400 liters per trough	2	Slah				
Capacity: 400 liters per trough Slab specification for drinking troughs	2	Slab				
Capacity : 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa	2	Slab				
Capacity : 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete	2	Slab				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material	2	Slab				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter	2	Slab				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m ² (9.45 m ³ concrete)	2	Slab				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245	2	Slab				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm						
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification	2	Test cube				
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab The trench specification						
Capacity: 400 liters per trough Slab specification for drinking troughs Concrete strength: 30 MPa Construction material: concrete Backfilling: G5 material Slab size: 9 meter x 7 meter x 0.15 meter Size: 62 m² (9.45 m³ concrete) Mesh type: mesh 245 Excavation depth: 450 mm Provide concrete test cube results for slab	2	Test cube				

32 mm inserts T-piece (nylon)	4	T/piece	
 32 mm male adaptor (nylon) 	2	Adaptor	
32 mm x 0.8 m standpipe	2	Pipe	
32 mm nipple (galv)	2	Nipple	
32 mm bend (galv)	2	Bend	
32 mm M&F bend	2	Bend	_
32 mm brass gate valve	2	Valve	
32 mm ball valve	2	Valve	
32 mm float valve (control water level)	2	Valve	
32 mm clamp (wire type)	24	Clamp	
32 mm class 3 LDPE pipe	30	Meter	
Thread tape	20	Roll	
RETENTION FEE (10%)		1.5.	
TOTAL			

2.7 Metsimantsi Wyk 4 (S 26° 55' 41.6"; E 23° 08' 09.7")

	DESCRIPTION		Qty	Unit	Price/Ur VAT Inc	Total Price
1	WINDMILL	LOCATION: S 26° 55' 41.6"; E 23	° 08' 09).7"	11 15 70 10 20 20 20 20 20 20 20 20 20 20 20 20 20	100000000000000000000000000000000000000
	Supply and installation of Windmill (Includes all equipment, materials, transport and labour required) Install 9 m high windmill tower with a 3.0m Ø wheel with a gearbox, tail brake system, fork rod, bucket rod (pitman), wood rod x 3 meter and force head. Windmill make: Windmill model:			Windmill		
	 50 mm Ø x 3.0m Galvanized medium screwed/socket pipe SABS 			Pipe		
	 16 mm Ø x 3.0m Electro plated pump rods with socks and protectors 			Rod		
-	12 month maintenance plan		1	Windmill		
	Dismantle of old windmill and removed pipes and rods		1	Windmill		
	Borehole specification (Pump depth = 27 m	eters)				
	Borehole depth	58 m				
	Water level Delivery Water abstraction limit at 60 % of delivery	Before test: 19 m After test: 19.7 m 6 000 l/h				
	Deep-water cylinder diameter 60 mm tub Cylinder make: Cylinder model: Cylinder size:64 mm Specify delivery of cylinder:770 L Total head:± 25meters		1	Cylinder		

	Windmill tower foundation				
	Concrete strength: 30 MPa	-	m³		
	Size: according to the windmill manufacture's specification				
	Provide concrete test cube results	2	Test cube		
1000	Supporting concrete block around casing	0.09	m ³		
	Concrete strength: 30 MPa				
	Construction material: concrete				
	Size: 600mm (Height) x 400 mm (Wide) x 400 mm (Length)				
	Provide concrete test cube results	2	Test cube		
-	Fittings from windmill to reservoir				
ŀ	50 mm Ø brass foot valves (strainer)	1	Valve		
-	50 mm Ø base plate	1	Plate		
1	50 mm Ø brass non return valve	1	Valve		
-	50 mm Ø brass force head	1	F/head		
	 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with 	1	Air		
L	20mm brass gate valve		chamber		
L	50 mm nipple (galv)	3	Nipple		
L	• 50 mm T-piece (galv)	2	T/piece		
	• 50 mm x 0.5 meter standpipe (galv)	1	Pipe		
	40 mm male adaptor (nylon)	1	Adaptor		
-	50 mm x 40 mm reducing bush (nylon)	1	R/bush		
	50 mm male bend (galv)	2	Bend		
	40 mm male bend (galv)	1	Bend		
	40 mm pipe clamp	2	Clamp		
•	40 mm LDPE pipe	30	Meter		
REPAIR OF RESERVOIR WITH DRINKING TROUGH:					
-	Repair and sealing of existing reservoir and drinking trough around.				
٠	The existing reservoir and drinking trough around the reservoir need to be				
(leaned and the cracks to be repaired inside and outside with sand/cement				
	ller. The inside of the reservoir and drinking trough needs to be sealed with				
9	eotextiles matt (90-100 g/m²) and polymer anionic bitumen emulsion sealant.				
S	pecification type of matt:				
S	pecification type of sealing:				
C	coating layers recommended :				
	he sealing matt should go over the wall of the reservoir down the outside				
	all for 30 cm and where the matt is joined the overlap should be 30 cm.				
	here the inner wall meets the floor the overlap should be 30 cm.				
	ethod of application: Paint area to be seal with sealant and apply the att to the area and paint the matt 4 x coats with sealant				

The concrete manhole cover to protect the float v	valve should be included		1	
Size of reservoir	raive stilouid be illicitiqed			
		4	D	
Size of reservoir		1	Reservoir	
Diameter : 5.10 meter				
Height: 2.9 meters				
Circumference: 16.02 meters				
		1	Drinking	
Size of drinking trough around reservoir		•	Drinking	
Width: 40 cm			trough	
Depth: 50 cm				
Length from reservoir wall to trough: 30cm				
Repair of apron around existing reservoir:				
Three (3) meter apron should be constructed arou	and the existing reservoir			
Inner circumference apron: 23 meters				
Outer circumference of apron: 42 meters				
Thickness of apron: 50 mm &100 mm [for 1 m (100	0mm) and 2 m (50mm)1			
Width of apron: 3 meter	, (
Size of apron: 96. m ²				
Concrete strength: 30 MPa				
Construction material: concrete	1	1	Apron	
Mesh type: mesh 245			, iprott	
Excavate 450mm and backfill with G5 material	compacted to 93% MOD			
AASHTO				
Provide concrete test cube results	2	!	Test cube	
Inlet pipe fittings (40 mm)				
 2.5 meter x 40 mm standpipe (galv) 	1		Pipe	
 0.3 meter x 40 mm standpipe (galv) 	1		Pipe	
40 mm bend (galv)	3		Bend	
40 mm male adaptor (galv)	2		Adaptor	
40 mm pipe clamp for LDPE pipe	1		Clamp	
Outlet pipe fittings (40 mm)				
40 mm outlet screen (stainless steel)	1	5	Screen	
0.5 meter x 40 mm standpipe (galv)	1		Pipe	
40 mm brass gate valve (brass)	1		/alve	
40 mm bend (galv)	1		Bend	
40 mm float valve	1		/alve	
40 mm nipple (galv)	1		lipple	
40mm x 32 mm reducing bush (galv)	1		VBush	
32 mm male adaptor	1		daptor	
RETENTION FEE (10%)			чартог	
TOTAL		-		

2.8 Longhurst (\$ 26°54' 57.9"; E 23° 32' 43.7")

DESCRIPTION		Qty	Unit	Price/Uni	Total
			10.00	VAT Incl	A COUNTY OF LAND
	LOCATION: S 26°54' 57.9"; E 23° 3	2' 43.7"			
Supply and installation of Windmill (Includes all equipment, materials, transport Install 9 m high windmill tower with a 2.5 m system, fork rod, bucket rod (pitman), wood i Windmill make:	Ø wheel with a gearbox, tail brak od x 3 meter and force head.	e 1	Windmill		
50mm Ø x 3.0m Galvanized medium scr	ewed/socket pipe SABS	16	Pipe		
16 mm Ø x 3.0m Electro plated pump roo	ds with socks and protectors	17	Rod	1	
12 month maintenance plan		1	Windmill		
Dismantle of old windmill and removed p	ipes and rods	1	Windmill	++	
Borehole specification (Pump depth = 42 met		+	1	+ +	
Borehole depth	50 m				
Water level Delivery Water abstraction limit at 60 % of delivery	Before test: 24 m After test: 38.2 m 2000 l/h 1200 l/h				
Deep-water cylinder diameter 60 mm tuber Cylinder make:		1	Cylinder		
Windmill tower foundation					
Concrete strength: 30 MPa Size: according to the windmill manufacture's s	specification	-	m ³		
Provide concrete test cube results		2	Test cube		
Supporting concrete block around casing Concrete strength: 30 MPa Construction material: concrete Size: 600mm (Height) x 400 mm (Wide) x 400	mm (Length)	0.09	m ³		
Provide concrete test cube results		2	Test cube		
Fittings from windmill to reservoir					
 50 mm Ø brass foot valves (strainer) 		1	Valve		
50 mm Ø base plate		1	Plate		
50 mm Ø brass non return valve		1	Valve		
50 mm Ø brass force head		1	F-head		
 50 mm Ø inlet air chamber (150mm Ø x 96 20 mm brass gate valve 	00mm steel pipe (2mm thick) with		Air chamber		

50 mm nipple (galv)	3	Nipple	
50 mm T-piece (galv)	2	T/piece	-
50 mm x 0.5 meter standpipe (galv)	1	Pipe	_
50 mm x 40 mm reducing bush (nylon)	1	R/bush	-
50 mm male bend (galv)	2	Bend	
40 mm male bend (galv)	1	Bend	-
40 mm male adaptor (nylon)	1		-
40 mm pipe clamp	2	Adaptor	-
40 mm LDPE pipe	30	Clamp	-
RESERVOIR WITH DRINKING TROUGH LOCATION: Approximate		Meter	
Construction of concrete reservoir with drinking trough around	ely Sill a		
Circular reinforced concrete reservoir, diameter 4.5 m, height 2.1 m, wa		Reservoir	
thickness 225 mm, capacity 33.5 m³ (33.5 kl), The wall and floor should be	1 1		
reinforced horizontally and vertically. Reservoir should be supplied with inlet and			
outlet.	1		
The drinking trough wall should be cast simultaneously with the first lift of the			
reservoir wall. The trough should have a wall that is 150mm in width and 500mm	1	Drinking	
high (inner face) and 700mm (outer face). The width of the trough (from outer		trough	
face of reservoir wall to inner face of trough wall) should be 625mm.			
The steel plate to cover the float valve in the drinking trough should be included.			
Provide concrete test cube results	_		
Construction of new apron around reservoir:	10	Test cube	
Three (3) meter apron should be constructed around the existing reservoir			
Inner circumference apron : 23 meters	1	Apron	
Outer circumference of apron : 42 meters			
Thickness of apron : 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]			
Width of apron: 3 meter			
Size of apron: 96 m ²			
Mesh type: mesh 245			
Concrete strength: 30 MPa			
Construction material: concrete			
Excavate 450mm and backfill with G5 material compacted to 93% MOD AASHTO			
Provide concrete test cube results	2	Tool	
Inlet pipe fittings (40 mm)	-	Test cube	
2.5 meter x 40 mm standpipe (galv)	1	Dine	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm bend (galv)	1	Pipe	
40 mm male adaptor (galv)	3	Bend	
40 mm pipe clamp for LDPE pipe	2	Adaptor	
Outlet pipe fittings (40 mm)	1	Clamp	
40 mm outlet screen (stainless steel)	_		
0.5 meter x 40 mm standpipe (galv)	1	Screen	
(gair)	1	Pipe	

40 mm brass gate valve (brass)	1	Velve	
40 mm float valve	1	Valve	
40 mm T-piece	1	Valve	
40 mm bend (galv)	1	T/piece	
40 mm nipple (galv)	1	Bend	
	1	Nipple	
To min x oz min readoing bush (galv)	1	R/Bush	
32 mm male adaptor DRINKING TROUGHS: 1ST LOCATION: Approximately 120	1	Adaptor	
DRINKING TROUGHS: 1 ST LOCATION: Approximately 120 m			
2 ND LOCATION: Approximately 120 m a Supply and installation of concrete casted drinking troughs			
Drinking troughs specifications	2	Trough	
Concrete casted drinking troughs with cover to protect ball valve			
Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter			
Capacity: 400 liters per trough			
Slab specification for drinking troughs	-		
Concrete strength: 30 MPa	2	Slab	
Construction material: concrete			
Backfilling: G5 material			
Slab size: 9 meter x 7 meter x 0.15 meter			
1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1			
Size: 62 m ² (9.45 m ³ concrete)			
Mesh type: mesh 245			
Excavation depth: 450 mm			
Provide concrete test cube results for slab	2	Test cube	
The trench specification	240	Meter	
Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m			
Fittings for troughs			
32 mm inserts T-piece (nylon)	4	T/piece	
32 mm male adaptor (nylon)	2	Adaptor	
32 mm x 0.8m standpipe	2	Pipe	
32 mm nipple (galv)	2	Nipple	-
32 mm bend (galv)	2	Bend	-
32 mm M&F bend	2	Bend	
32 mm brass gate valve	2	Valve	_
32 mm ball valve	2	Valve	
32 mm float valve (Control water level)	2	Valve	
32 mm clamps (wire type)	24	Clamp	
32 mm class 3 LDPE pipe	300	·	
Thread tape		Meter	
RETENTION FEE (10%)	20	Roll	
TOTAL			

2.9 Wingate (\$ 27°06'28.9"; E 23°15'02.8")

DESCRIPTION		Qty	Unit	Price/U	Total Price
MINDAIL				VAT In	VAT Incl
WINDMIL	L LOCATION: S 27°06'28.9"; E 2	3°15′02.0	B"		
Supply and installation of Windmill (Includes all equipment, materials, transport Install 9 m high windmill tower with a 2.5 m (state) system, fork rod, bucket rod (pitman), wood Windmill make:	7 wheel with a gearbox, tail brake rod x 3 meter and force head.	e 1	Windmill		
50 mm Ø x 3.0m Galvanized medium so		14	Pipe	-	
16 mm Ø x 3.0m Electro plated pump ro		16	Rod	1	
12 month maintenance plan		1	Windmill		
Dismantle of old windmill and removed p	pipes and rods	1			
Borehole specification (Pump depth = 42 m		-	Windmill	-	
Borehole depth	55 m				
Water level Delivery	Before test : 8 m After test : 34 m 2000l/h				
Water abstraction limit at 60 % of delivery	1200 l/h				
Cylinder model:					
Windmill tower foundation					
Concrete strength: 30 MPa Size: according to the windmill manufacture's	specification	-	m³		
Provide concrete test cube results		2	Test cube		
Supporting concrete block around casing Concrete strength: 30 MPa Construction material: concrete Size: 600mm (Height) x 400 mm (Wide) x 400) mm (Length)	0.09	m³		
Provide concrete test cube results		2	Test cube		
Fittings from windmill to reservoir					
50 mm Ø brass foot valves (strainer)		1	Valve		
50 mm Ø base plate		1	Plate		
50 mm Ø brass non return valve		1	Valve		
50 mm Ø bross force base		1	F/head		
50 mm Ø brass force head 50 mm Ø inlet air chamber (150mm Ø x swith 20mm brass gate valve	900mm steel pipe (2mm thick)	1	Air		

50 mm T-piece (galv)	2	T/piece	T	T
50 mm x 0.5 meter standpipe (galv)	1	Pipe		
40 mm male adaptor (nylon)	1	Adaptor		
50 mm x 40 mm reducing bush (nylon)	1	R/bush		-
50 mm male bend (galv)	2	Bend		+
40 mm male bend (galv)	1	Bend		-
40 mm pipe clamp	2	Clamp		+
40 mm LDPE pipe	30	Meter	-	-
REPAIR OF RESERVOIR WITH DRINKING				
Repair and sealing of existing reservoir and trough.				T
The existing reservoir and drinking trough around the reservoir need to be,				
cleaned and the cracks to be repaired inside and outside with sand/cement				
filler. The inside of the reservoir and drinking trough needs to be sealed with				
geotextiles matt (90-100 g/m²) and polymer anionic bitumen emulsion sealant.				
Specification type of matt:				
Specification type of sealing:				
Coating layers recommended :				
The sealing matt should go over the wall of the reservoir down the outside				
wall for 30 cm and where the matt is joined the overlap should be 30 cm.				
Where the inner wall meets the floor the overlap should be 30 cm.				
Method of application: Paint area to be seal with sealant and apply the				
matt to the area and paint the matt 4 x coats with sealant				
The concrete manhole cover to protect the float valve should be included		_		
Size of reservoir	1	Reservoir		
Size of reservoir				
Diameter: 5.09 meter				
leight: 2.9 meters				
Sircumference: 16.2 meters				
	1	Drinkina		
ize of drinking trough around reservoir		Drinking trough		
/idth: 33 cm		aougn		
epth: 45 cm				
ength from reservoir wall to trough: 35 cm				
onstruction of new apron around existing reservoir:				
hree (3) meter apron should be constructed around the existing reservoir.				
ner circumference apron: 23 meters				
uter circumference of apron: 42 meters				
nickness of apron : 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]				
· · · · · · · · · · · · · · · · · · ·				
idth of apron: 3 meter				

Mesh type: mesh 245			
Concrete strength: 30 MPa			
Construction material: concrete			
Excavate 450mm and backfill with G5 material compacted to 93% MOD			
AASHTO			
Provide concrete test cube result	2	Test cube	
Cutting down of the trees	2	Tree	
Inlet pipe fittings (40 mm)			
2.5 meter x 40 mm standpipe (galv)	1	Pipe	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm bend (galv)	3	Bend	
40 mm male adaptor (galv)	2	Adaptor	
40 mm pipe clamp for LDPE pipe	1	Clamp	
Outlet pipe fittings (40 mm)			
40 mm outlet screen (stainless steel)	1	Screen	
0.5 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm brass gate valve (brass)	1	Valve	
40 mm bend (galv)	1	Bend	
40 mm float valve	1	Valve	
40 mm nipple (galv)	1	Nipple	
40mm x 32 mm reducing bush (galv)	1	R/Bush	
32 mm male adaptor	1	Adaptor	
RETENTION FEE (10%)		·	
TOTAL			+

2.10 Dithakong (Lokaleng) (S 27°04' 49.8"; E 23° 56' 40.1")

	DESCRIPTION		Qty	Unit	Price/Uni	Total P		
					VAT Incl			
1.	WINDMILL LOCATION: S 27°04' 49.8"; E 23° 56' 40.1"							
	Supply and installation of Windmill							
	(Includes all equipment, materials, transport and labour required)							
	Install 9 m high windmill tower with a 3 m Ø wheel with a gearbox, tail brake		1	Windmill				
	system, fork rod, bucket rod (pitman), wo	ood rod x 3 meter and force head.						
	Windmill make:							
	Windmill model:							
	50mm Ø x 3.0m Galvanized medium	n screwed/socket pipe SABS	19	Pipe				
	• 16 mm Ø x 3.0m Electro plated pum	p rods with socks and protectors	22	Rod				
	 12 month maintenance plan 		1	Windmill				
	 Dismantle of old windmill and remov 	ed pipes and rods	1	Windmill				
	Borehole specification (Pump depth = 57	meters)						
	Borehole depth	59 m						
	Water level	Before test: 24						

Delivery Water abstraction limit at 60 % of delivery	After test : 50 1500 l/h 900 l/h		
Deep-water cylinder diameter 50 mm tub Cylinder make: Cylinder model: Cylinder size:50 mm Specify delivery of cylinder:500 Total head:± 60 meters		1	Cylinder
Windmill tower foundation Concrete strength: 30 MPa Size: according to the windmill manufacture's	specification	-	m³
Provide concrete test cube results		2	Test cube
Supporting concrete block around casing Concrete strength: 30 MPa Construction material: concrete Size: 600mm (Height) x 400 mm (Wide) x 400	0 mm (Length)	0.09	m³
Provide concrete test cube results		2	Test cube
Fittings from windmill to reservoir			
 50 mm Ø brass foot valves (strainer) 		1	Valve
50 mm Ø base plate		1	Plate
 50 mm Ø brass non return valve 		1	Valve
 50 mm Ø brass force head 		1	F-head
 50 mm Ø inlet air chamber (150mm Ø x s 20 mm brass gate valve 	900mm steel pipe (2mm thick) with	1	Air chamber
 50 mm nipple (galv) 		3	Nipple
50 mm T-piece (galv)		2	T/piece
 50 mm x 0.5 meter standpipe (galv) 	The state of the s	1	Pipe
 50 mm male bend (galv) 		2	Bend
 40 mm male bend (galv) 		1	Bend
 50 mm x 40 mm reducing bush 		1	R/bush
40 mm male adaptor (nylon)		1	Adaptor
40 mm pipe clamp		2	Clamp
40 mm LDPE pipe		30	Meter
RESERVOIR WITH DRINKING TRO	OUGH LOCATION: Approximately 5	5m away	from the windmill
Construction of concrete reservoir with drinking	trough around		Reservoir
Circular reinforced concrete reservoir, diame hickness 225 mm, capacity 33.5 m³ (33.5 kl)		1	
reinforced horizontally and vertically. Reservoir butlet.	should be supplied with inlet and		
The drinking trough wall should be cast simult		1	Drinking
eservoir wall. The trough should have a wall that	at is 150mm in width and 500mm		trough

high (inner face) and 700mm (outer face). The width of the trough (from outer			
face of reservoir wall to inner face of trough wall) should be 625mm.			
The steel plate to cover the float valve in the drinking trough should be included.			
Provide concrete test cube results	10	Test cube	
Construction of new apron around reservoir:	+	TOUTOUDC	
Three (3) meter apron should be constructed around the existing reservoir.	1	Apron	
Inner circumference apron : 23 meters	1.	Apron	
Outer circumference of apron : 42 meters			
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]			
Width of apron : 3 meter			
Size of apron: 96 m ²			
Mesh type: mesh 245			
Concrete strength: 30 MPa			
Construction material: concrete			
Excavate 450mm and backfill with G5 material compacted to 93% MOD AASHTO			
Provide concrete test cube results	2	Test cube	-
Inlet pipe fittings (40 mm)	ļ —	T COT CUDE	
2.5 meter x 40 mm standpipe (galv)	1	Pipe	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	-
40 mm bend (galv)	3	Bend	
40 mm male adaptor (galv)	2	Adaptor	-
40 mm pipe clamp for LDPE pipe	1	Clamp	-
Outlet pipe fittings (40 mm)	•	Clamp	+
40 mm outlet screen (stainless steel)	1	Screen	+
0.5 meter x 40 mm standpipe (galv)	1		
40 mm brass gate valve (brass)	1	Pipe Valve	-
40 mm float valve	1	Valve	-
40 mm T-piece			_
40 mm bend (galv)	1	T/piece	-
40 mm nipple (galv)	1	Bend	-
40 mm x 32 mm reducing bush (galv)	1	Nipple	_
32 mm male adaptor	1	R/Bush	
DRINKING TROUGHS: 1 ST LOCATION: Approximately 120 m awa	1	Adaptor	
2 ND LOCATION: Approximately 120 m away			
Supply and installation of concrete casted drinking troughs			
Drinking troughs specifications	2	Trough	
Concrete casted drinking troughs with cover to protect ball valve			
Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter			
Capacity: 400 liters per trough			

	Slab specification for drinking troughs	2	Slab		
	Concrete strength: 30 MPa				
	Construction material: concrete				
	Backfilling: G5 material				
1	Slab size : 9 meter x 7 meter x 0.15 meter				
1	Size: 62 m ² (9.45 m ³ concrete)				
1	Mesh type: mesh 245				
E	Excavation depth: 450 mm				
F	Provide concrete test cube results for slab	2	Test cube		
1	he trench specification	240	Meter		
8	size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3m			.	
F	ittings for troughs				
•	32 mm inserts T-piece (nylon)	4	T/piece		
•	32 mm male adaptor (nylon)	2	Adaptor		
•	32 mm x 0.8m standpipe	2	Pipe		
•	32 mm nipple (galv)	2	Nipple		
•	32 mm bend (galv)	2	Bend		
•	32 mm M&F bend	2	Bend		
•	32 mm brass gate valve	2	Valve		
•	32 mm ball valve	2	Valve		-
•	32 mm float valve (Control water level)	2	Valve		
•	32 mm clamps (wire type)	24	Clamp		
•	32 mm class 3 LDPE pipe	300	Meter		
•	Thread tape	20	Roll		
RI	ETENTION FEE (10%)				
TO	DTAL				
					- 1

2.11 Dikhing (S 27°18' 31.3"; E 23° 44' 18.8")

	DESCRIPTION	Qty	Unit	Price/Un	Total F
				VAT Inc	VAT In
1.	WINDMILL LOCATION: S 27°18' 31.3"; E 23° 44'	18.8"			
	Supply and installation of Windmill (Includes all equipment, materials, transport and labour required) Install 9 m high windmill tower with a 3 m Ø wheel with a gearbox, tail brake system, fork rod, bucket rod (pitman), wood rod x 3 meter and force head. Windmill make: Windmill model:	1	Windmill		
	 50mm Ø x 3.0m Galvanized medium screwed/socket pipe SABS 	8	Pipe		
	 16 mm Ø x 3.0m Electro plated pump rods with socks and protectors 	9	Rod		
	12 month maintenance plan	1	Windmill		
	Dismantle of old windmill and removal of pipes and rods	1	Windmill		

Borehole specification (Pump depth = 24 m Borehole depth				1
	62 m			
Water level	Before test: 3 After test: 17.9			
Delivery	1500 l/h			
Water abstraction limit at 60 % of delivery	900 l/h			
Deep-water cylinder diameter 60 mm tub	e length 550 mm	1	Cylinder	
Cylinder make:		'	Cyllide	
Cylinder model:				
Cylinder size: 64 mm				
Specify delivery of cylinder:770 Li	iters/hour			
Total head :± 20 meters				
Windmill tower foundation		-		
Concrete strength: 30 MPa		_	m³	
Size: according to the windmill manufacture's	specification		1111	
Provide concrete test cube results		2	Test cube	
Supporting concrete block around casing		0.09	m ³	
Concrete strength: 30 MPa		0.09	m	
Construction material: concrete				
Size: 600mm (Height) x 400 mm (Wide) x 400	mm (length)			
Provide concrete test cube results	· ····· (Longar)	2	 	_
Fittings from windmill to reservoir		2	Test cube	
50 mm Ø brass foot valves (strainer)		1	1	
50 mm Ø base plate		1	Valve	
50 mm Ø brass non return valve		1	Plate	_
50 mm Ø brass force head		1	Valve	
		1	F-head	
The state of the s	DUMM steel pipe (2mm thick) with	1	Air	
20 mm brass gate valve			chamber	
50 mm nipple (galv) 50 mm T-piece (galv)		3	Nipple	
commit piece (gaiv)		2	T/piece	
50 mm x 0.5 meter standpipe (galv)		1	Pipe	
• 50 mm male bend (galv)		2	Bend	
40 mm male bend (galv)		1	Bend	
50 mm x 40 mm reducing bush		1	R/bush	
40 mm male adaptor (nylon)		1	Adaptor	
40 mm pipe clamp		2	Clamp	
40 mm LDPE pipe		30	Meter	
	SERVOIR WITH DRINKING TROU	IGH:	1	
Repair and sealing of existing reservoir and troug	- 1			
The existing reservoir and drinking trough around	und the reservoir need to be,			
cleaned and the cracks to be repaired inside and				
The inside of the reservoir and drinking trou	gh needs to be sealed with			
geotextiles matt (90-100 g/m²) and polymer anion	nic bitumen emulsion sealant			

Specification type of matt:		
A CONTRACTOR OF THE CONTRACTOR		
Specification type of sealing:		
Coating layers recommended :		
The sealing matt should go over the wall of the reservoir down the outside wall		
for 30 cm and where the matt is joined the overlap should be 30 cm.		
Where the inner wall meets the floor the overlap should be 30 cm.		
Method of application : Paint area to be seal with sealant and apply the matt		
to the area and paint the matt 4 x coats with sealant		
The concrete manhole cover to protect the float valve should be included	1	Reservoir
Size of reservoir		1.00011011
Size of reservoir		
Diameter: 5.09 meter		
Height: 2.9 meters		
Circumference: 16.2 meters		
	1	Drinking
Size of drinking trough around reservoir		trough
Width: 33 cm		
Depth: 45 cm		
Length from reservoir wall to trough: 35 cm		
Construction of new apron around reservoir:		
Three (3) meter apron should be constructed around the existing reservoir.	1	Apron
Inner circumference apron : 23 meters		
Outer circumference of apron : 42 meters		
Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]		
Width of apron: 3 meter		
Size of apron: 96 m ²		
Mesh type: mesh 245		
Concrete strength: 30 MPa		
Construction material: concrete		
Excavate 450mm and backfill with G5 material compacted to 93% MOD AASHTO		
Provide concrete test cube results	2	Test cube
Inlet pipe fittings (40 mm)		
2.5 meter x 40 mm standpipe (galv)	1	Pipe
0.3 meter x 40 mm standpipe (galv)	1	Pipe
40 mm bend (galv)	3	Bend
40 mm male adaptor (galv)	2	Adaptor
40 mm pipe clamp for LDPE pipe	1	Clamp
Outlet pipe fittings (40 mm)		
40 mm outlet screen (stainless steel)	1	Screen
0.5 meter x 40 mm standpipe (galv)	1	Pipe

TOTAL		
RETENTION FEE (10%)		
32 mm male adaptor	1	Adaptor
40 mm x 32 mm reducing bush (galv)	1	R/Bush
40 mm nipple (galv)	1	Nipple
40 mm bend (galv)	1	Bend
40 mm float valve	1	Valve
40 mm brass gate valve (brass)	1	Valve

2.12 Gasehunelo wyk 9 (S 27°12' 48.4"; E 23° 34' 46.6")

DE	ESCRIPTION		Qty	Unit	Price/Uni	Total F
					VAT Incl	VAT In
	WINDMILL LOCATION: S 27°12' 48.4"; E 23° 34' 46.6"					
Su	pply and installation of Windmill					
(In	(Includes all equipment, materials, transport and labour required)					
Ins	Install 9 m high windmill tower with a 2.5 m Ø wheel with a gearbox, tail brake		1	Windmill		
1	stem, fork rod, bucket rod (pitman), wood					
1	ndmill make:					
Wii	ndmill model:					
•	50mm Ø x 3.0m Galvanized medium sc	rewed/socket pipe SABS	4	Pipe		
•	16 mm Ø x 3.0m Electro plated pump ro	ods with socks and protectors	5	Rod		
•	12 month maintenance plan		1	Windmill		
•	Dismantle of old windmill and removed pipes and rods		1	Windmill		
Bor	rehole specification (Pump depth = 10 m	eters)				
В	prehole depth	20 m				
W	ater level	Before test: 3 m				
		After test : 3.3 m				
De	elivery	5000 l/h				
W	ater abstraction limit at 60 % of delivery	3000 l/h				
•	Deep-water cylinder diameter 60 mm tub	e length 550 mm	1	Cylinder		
	Cylinder make:					
	Cylinder model:					
	Cylinder size:64 mm					
	Specify delivery of cylinder:770	Liters/hour				
	Total head :± 10 meters					
	dmill tower foundation					
	crete strength: 30 MPa		-	m ³		
	: according to the windmill manufacture's	specification				
	ride concrete test cube results		2	Test cube		
	porting concrete block around casing		0.09	·m³		
Cond	crete strength: 30 MPa					
Cons	struction material: concrete					

Provide concrete test cube results	2	Test cube
Fittings from windmill to reservoir		rest cube
50 mm Ø brass foot valves (strainer)	1	Valve
50 mm Ø base plate	1	Plate
50 mm Ø brass non return valve	1	Valve
50 mm Ø brass force head	1	F-head
• 50 mm Ø inlet air chamber (150mm Ø x 900mm steel pipe (2mm thick) with		Air
20 mm brass gate valve	' '	chamber
50 mm nipple (galv)	3	Nipple
50 mm T-piece (galv)	2	T/piece
50 mm x 0.5 meter standpipe (galv)	1	Pipe
50 mm male bend (galv)	2	Bend
50 mm x 40 mm reducing bush	1	R/bush
40 mm male adaptor (nylon)	1	Adaptor
40 mm male bend (galv)	1	Bend
40 mm pipe clamp	2	Clamp
40 mm LDPE pipe	30	Meter
RESERVOIR WITH DRINKING TROUGH LOCATION: Approximately	1	
Construction of concrete reservoir with drinking trough around		Reservoir
reinforced horizontally and vertically. Reservoir should be supplied with inlet and outlet.		
The drinking trough wall should be cast simultaneously with the first lift of the	2	Drinking
	1	
reservoir wall. The trough should have a wall that is 150mm in width and 500mm		trough
high (inner face) and 700mm (outer face). The width of the trough (from outer		trough
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm.		trough
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included.		trough
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results	10	trough Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir:	10	
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir.	10	
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)]		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Chickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter Size of apron: 96 m ²		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter Size of apron: 96 m ² Mesh type: mesh 245		Test cube
high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter Size of apron: 96 m ² Mesh type: mesh 245 Concrete strength: 30 MPa		Test cube
reservoir wall. The trough should have a wall that is 150mm in width and 500mm high (inner face) and 700mm (outer face). The width of the trough (from outer face of reservoir wall to inner face of trough wall) should be 625mm. The steel plate to cover the float valve in the drinking trough should be included. Provide concrete test cube results Construction of new apron around reservoir: Three (3) meter apron should be constructed around the existing reservoir. Inner circumference apron: 23 meters Outer circumference of apron: 42 meters Thickness of apron: 50 mm &100 mm [for 1 m (100mm) and 2 m (50mm)] Vidth of apron: 3 meter Size of apron: 96 m ² Mesh type: mesh 245 Concrete strength: 30 MPa Construction material: concrete Excavate 450mm and backfill with G5 material compacted to 93% MOD AASHTO		Test cube

Inlet pipe fittings (40 mm)					
2.5 meter x 40 mm standpipe (galv)	1	Pipe			
0.3 meter x 40 mm standpipe (galv)	1	Pipe			
40 mm bend (galv)	3	Bend			
40 mm male adaptor (galv)	2	Adaptor			
40 mm pipe clamp for LDPE pipe	1	Clamp			
Outlet pipe fittings (40 mm)					
40 mm outlet screen (stainless steel)	1	Screen			
0.5 meter x 40 mm standpipe (galv)	1	Pipe			
40 mm brass gate valve (brass)	1	Valve			
40 mm float valve	1	Valve			
40 mm T-piece	1	T/piece			
40 mm bend (galv)	1	Bend			
40 mm nipple (galv)	1	Nipple	-		
40 mm x 32 mm reducing bush (galv)	1	R/Bush			
32 mm male adaptor	1	Adaptor	-		
		-			
DRINKING TROUGHS: 1 ST LOCATION: Approximately 120 m away from the reservoir 2 ND LOCATION: Approximately 120 m away from the reservoir					
Supply and installation of concrete casted drinking troughs	1	T			
Drinking troughs specifications	2	Trough			
Concrete casted drinking troughs with cover to protect ball valve					
Size: length 2.45 meter x width 0.65 meter x depth 0.56 meter					
Capacity: 400 liters per trough					
Slab specification for drinking troughs	2	Slab			
Concrete strength: 30 MPa	2	SIND			
Construction material: concrete					
Backfilling: G5 material					
Slab size : 9 meter x 7 meter x 0.15 meter					
Size: 62 m ² (9.45 m ³ concrete)					
Mesh type: mesh 245					
Excavation depth: 450 mm					
Provide concrete test cube results for slab	2	Test cube			
The trench specification	240	Meter			
Size: The pipe should be buried in a trench of 0.5m deep with the width of 0.3r	1 222	MICICI			
Fittings for troughs	-				
32 mm inserts T-piece (nylon)	4	T/niana			
32 mm male adaptor (nylon)	4	T/piece	-		
32 mm x 0.8m standpipe	2	Adaptor	-		
32 mm nipple (galv)	2	Pipe			
32 mm bend (galv)	2	Nipple	-		
	2	Bend			
	2	Bend			
32 mm brass gate valve	2	Valve			

RETENTION FEE (10%)		
Thread tape	20	Roll
32 mm class 3 LDPE pipe	300	Meter
32 mm clamps (wire type)	24	Clamp
32 mm float valve (Control water level)	2	Valve
32 mm ball valve	2	Valve

2.13 Gamammebe (\$ 26°58'47.7"; E 23°53'43.9")

	DESCRIPTION		Qty	Unit		Total Price
1.	WINDMILL	LOCATION: S 26°58'47.7"; E 23	°53'43.9	9"	VAI III	VAT IIIG
	Supply and installation of Windmill		00 40.0			
	(Includes all equipment, materials, transport and labour required) Install 9 m high windmill tower with a 4.3 m Ø wheel with a gearbox, tail brake system, fork rod, bucket rod (pitman), wood rod x 3 meter and force head. Windmill make: Windmill model:		1	Windmill		
	50 mm Ø x 3.0m Galvanized medium so	50 mm Ø x 3.0m Galvanized medium screwed/socket pipe SABS				
	16 mm Ø x 3.0m Electro plated pump ro	ds with socks and protectors	26	Rod		
	12 month maintenance plan		1	Windmill		
	Dismantle of old windmill and removed pipes and rods		1	Windmill		
	Borehole specification (Pump depth = 69 meters)					
	Borehole depth	99 m				
	Water level	Before test : 30 m After test : 60.1 m				
	Delivery	1300 l/h				
	Water abstraction limit at 60 % of delivery	780 l/h				
A CONTRACTOR OF THE PERSON NAMED IN CONTRACTOR OF THE PERSON OF THE PERS	Deep-water cylinder diameter 60 mm tube length 550 mm Cylinder make:		1	Cylinder		
	Cylinder size:64 mm Specify delivery of cylinder:770 Liters/ hour Total head:± 69meters					
	Windmill tower foundation					
- 1	Concrete strength: 30 MPa	Concrete strength: 30 MPa		m³		
L	Size: according to the windmill manufacture's specification					
-	Provide concrete test cube results		2	Test cube		
	Supporting concrete block around casing		0.09	m ³		
	Concrete strength: 30 MPa					
	Construction material: concrete					
	Size: 600mm (Height) x 400 mm (Wide) x 400	0 mm (Length)				

Provide concrete test cube results		2	Test cube	
Fittings from windmill to reservoir		-		
50 mm Ø brass foot valves (street)	ainer)	1	Valve	
50 mm Ø base plate		1	Plate	
50 mm Ø brass non return valv	9	1	Valve	
50 mm Ø brass force head		1	F/head	
 50 mm Ø inlet air chamber (15 with 20mm brass gate valve 	0mm Ø x 900mm steel pipe (2mm thick)	1	Air chamber	
50 mm nipple (galv)		3	Nipple	
50 mm T-piece (galv)		2	T/piece	
50 mm x 0.5 meter standpipe (g	alv)	1	Pipe	
40 mm male adaptor (nylon)		1	Adaptor	
50 mm x 40 mm reducing bush	(nylon)	1	R/bush	
50 mm male bend (galv)		2	Bend	
40 mm male bend (galv)		1	Bend	
40 mm pipe clamp		1	Clamp	
40 mm LDPE pipe		30	Meter	
REI	PAIR OF RESERVOIR WITH DRINKING T	ROUGH:		
Repair and sealing of existing reserv	oir and trough.			
	trough around the reservoir need to be, red inside and outside with sand/cement			
cleaned and the cracks to be repair filler. The inside of the reservoir and	trough around the reservoir need to be, red inside and outside with sand/cement drinking trough needs to be sealed with olymer anionic bitumen emulsion sealant.			
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Size of drinking trough around reservoir			
Width: 2.6 cm			
Depth: 50 cm			
Length from reservoir wall to trough: 60 cm			
Repair of apron around existing reservoir:			
Seven (7) m length and 2.6 meter width of apron should be repaired (20 m²)	20 m²	Apron	
The old apron was constructed out of pieces of marble blocks. Therefore, the		Repair	
blocks should be repacked on the 20 m² and new grout needs to place. The	266 m²	286 m²	
rest of the apron needs to be re-grouted.			
Inlet pipe fittings (40 mm)			
2.5 meter x 40 mm standpipe (galv)	1	Pipe	
0.3 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm bend (galv)	3	Bend	
40 mm male adaptor (galv)	2	Adaptor	
40 mm pipe clamp for LDPE pipe	1	Clamp	
Outlet pipe fittings (40 mm)			
40 mm outlet screen (stainless steel)	1	Screen	
0.5 meter x 40 mm standpipe (galv)	1	Pipe	
40 mm brass gate valve (brass)	1	Valve	
40 mm float valve	1	Valve	
40 mm bend (galv)	1	Bend	
40 mm nipple (galv)	1	Nipple	
40 mm x 32 mm reducing bush (galv)	1	R/Bush	
32 mm male adaptor	1	Adaptor	
RETENTION FEE (10%)			
TOTAL			



CONSTRUCTION DETAILS OF THE 4.5m DIAMETER REINFORCED CONCRETE RESERVOIR

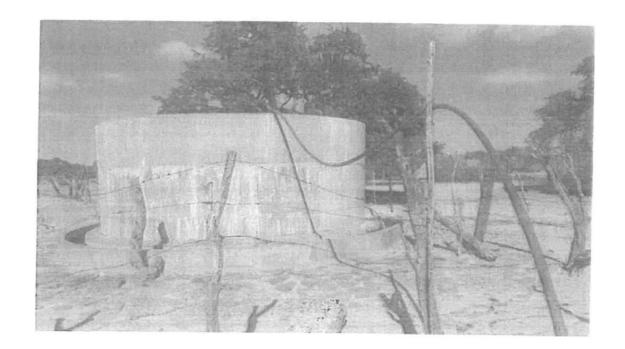




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PURPOSE OF THE DOCUMENT

This document provides construction guidelines and specification of the 4.5m diameter reinforced concrete reservoir. It is important that this document is read alongside the two drawings referenced RCR1 and RCR2, respectively. Attached is Annexure A, a Gantt chart summarizing the entire construction phases of the reservoir. It is important that the construction is carried out according to the SABS standards as stipulated in the referenced drawings.

1. CLEARING AND DEBUSHING

The designated area by the Engineer, approximately 400m², will be cleared as follows if and when necessary:

- a) clearing of boulders,
- b) grubbing of trees and tree stumps,
- c) backfilling of cavities,
- d) demolishing of structures and
- e) disposing of material thus cleared, grubbed, cut and/or demolished.

2. SETTING OUT OF THE FOOTING

In this, the procedure for setting out the footing for the reinforced concrete reservoir is explained. Refer to Figure 2.1 for an illustration of the procedure.

When the site has been leveled in all directions, a strong pipe is set firmly and vertically at the center of the reservoir. A strong wire loop is formed in such a way that it fits loosely around the central pipe and can easily slide up and down. To this loop attach a lighter wire and measure accurately along it a length equal to the inside radius of the reservoir. At this





point, twist a small loop into the wire. The loop not only serves as the base from which the trench for the footing can be set out, but also as a guide for the setting up of the forms.

Holding the wire stretched on the ground, drive a steel peg 100mm back from the base loop towards the center of the tank. From the peg, measure outwards along the center wire a distance equal to the required width of the footing (i.e. 1250mm) and drive a second peg. Next wind the loose end of the wire tightly round the first peg, withdraw it from the ground and with the bottom end mark out a circle round the center pipe. Straighten wire and repeat the procedure using the second (outer) peg.

The inner and outer circles scratched on the ground mark the corresponding inner and outer edges of the excavation for the footing.

As the final step in the setting out, a series of wooden pegs are driven into the ground at intervals of 1.5m along the perimeter of the reservoir and just inside the circle marking the inner edge of the footing excavation. The pegs should be leveled with a straight edge and hand level to serve as a reference point for the top of the footing. The top of the footing should be perfectly level and should correspond with the top of the ground surface on which the floor is to be laid (or that of any compact layer of gravel or hardcore which may be necessary because of the nature of the ground).





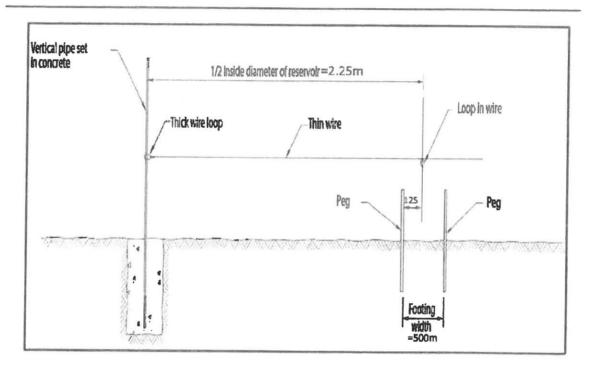


Figure 2.1: Setting out the circular reservoir footing

3. CONSTRUCTION OF WALL FOOTINGS

The excavations for footings should be carried down to firm ground, but in any case to a depth of not less than 250mm below the prepared surface of the site. The bottom of the excavation should be level, or cut in a series of steps, the top of which are horizontal. Stepped footings should be used only if the floor is to be slopped.

Pipe work under the reservoir should be placed and concreted in before the footing and ribs are cast.

Before placing any concrete, the bottom and sides of the excavation should be damped to prevent absorption of water from the concrete. When the concrete is placed, however, there should be no free water in the trench.





The concrete for footings need not be water tight, low strength concrete is therefore suitable. It should be placed uniformly and continuously along the trench, construction joints being avoided as far as possible. The concrete should be thoroughly tamped and spaded into place.

The top surfaces of footings should be brought up to exact levels and the concrete wood=floated to a smooth surface immediately after placing. When all bleeding has ceased,
which usually takes one to three hours after placing, the bleed water should be removed
by mopping or be allowed evaporate, the surface of the concrete should be heavily steeltrowelled to a smooth, flat finish.

The footing should be damped cured for a week (7 days) by covering it with sacking or old paper sacks which are kept saturated. Before walls are built and when concrete is sufficiently dry, the surface of the footing should be mopped with bitumen to provide the sliding joint.

Normally, footings need not be reinforced, but if the reservoir is to be built on clayey soil, or other material of doubtful stability, the Engineer shall provide specifications of the required reinforcement.

4. CONSTRUCTION OF THE DRINKING TROUGH

The drinking trough wall should be cast simultaneously with the first lift of the reservoir wall. The inner formwork of the trough wall should be 500mm wide and 22m length and 700mm wide and 23m length for the outer formwork. The reinforcement should be as specified in Drawing Ref No.: RCR 1. See section 6 below for further details on formwork.

The wall concrete should be 30MPa. The concrete should be placed within 30 minutes of mixing, in layers of 150mm for the full circumference of the wall. Care should be taken to ensure that the outer cover of concrete over reinforcement is well compacted. The wall should be thoroughly and continuously cured for at least 14 days after placing.





5. CONSTRUCTION OF THE RESERVOIR FLOOR

Once the footing has been completed, what follows is to cast the walls for the full height of the formwork, which is 800mm. The detail on the construction of the wall is given in section 6 below.

Before laying the floor, the earth immediately adjacent to the footing should be wetted and well rammed to ensure compaction, and the top surface of the footing should be mopped with bitumen.

A flexible, watertight expansion joint is required between the edge of the floor and the wall. The type of joint recommended is illustrated in Figure 5.1. The joint-filler in board form should be of resilient material, such as closed cell expanded polyethylene, cut beforehand into strips of the appropriate width, namely 75mm.

The timber strips for forming the grooves in the floor for the sealing compound should be prepared beforehand. If they are of the tapered cross-section shown in the drawing they will be easy to remove when necessary.

To make them easy to bend to fit against curved walls, saw-cuts may be made at intervals into the face of the timber which bears against the wall. A detachable strip of joint filler board may be used instead of the timber strip to form the groove. Joint-fillers and timbers are placed against the foot of the wall immediately before the concrete for the floor is cast.

The perimeter joint is necessary for concrete floors. Its width (dimension T in Figure 5.1) should be 12mm.





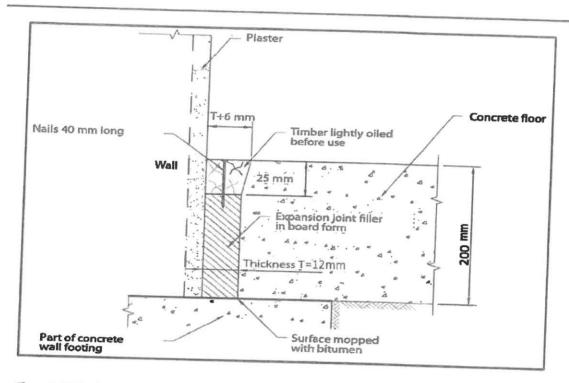


Figure 5.1 Joint between edge of floor and wall

Since the reservoir floor is only 4.5m in diameter, the floor can be cast at one go, and not divided up into panels.

The floor should be constructed as specified according to Drawing Ref. No.: RCR 1, making an important note of the reinforcement and concrete strength. Before placing the 50mm blinding layer of concrete, the ground (or layer of compacted material) under the floor should be thoroughly damped down to prevent moisture absorption from the concrete. However, at the time of placing, there should be no free water on the surface. Before placing the floor concrete, the blinding layer should be mopped with bitumen.

A 40mm depth of concrete is first put down; the reinforcement is laid over it and covered immediately by the remaining 160mm of concrete. Do not let the bottom layer of the concrete to dry out before the top layer is placed in position. The concrete in reservoir floors should be thoroughly compacted. The surface should be screeded level and float smoothed with a wood float as soon as possible.



Damp curing of the floor should continue for at least 14 days. The floor concrete should be damp cured by covering with sacking or empty cement bags which are continuously kept saturated. Covering the concrete with plastic sheeting to prevent drying is also satisfactory, while even better results will be obtained if the plastic is spread over the wet sacking, so ensuring that the latter does not dry out.

After the concrete has been damp-cured and has dried out, the timber strips are removed. The resulting groove is then cleaned, primed (to aid the adhesion of the joint-sealant) and finally filled with permanent plastic (elastomeric) joint sealant.

Some types of elastomeric sealant can be applied cold. Most of these compounds require that the concrete should be primed (i.e. painted beforehand with a suitable material). The concrete should be scrupulously clean. While these proprietary materials may be more expensive than solid bitumen, they are easier to use especially where they can be applied cold, and are far more satisfactory in service than bitumen.

6. CONSTRUCTION OF THE RESERVOIR WALL

The reservoir wall should be constructed as specified in the Drawing Ref. No.: RCR 1. The wall should be cast in three lifts, and the forms for the upper lift are to overlap the concrete previously cast by 100mm. The form height should be 800mm. The form may be entirely of timber, of timber and sheet metal, or of corrugated steel sheeting. The form should be raised when the concrete has hardened sufficiently, which is 48 hours after placing has been completed.

Corrugated steel forms are recommended, and when they are used, allowance should be made for an overlap of at least two corrugations when the forms are lifted.

A set of inside and outside forms that fit completely round the reservoir should be provided, to avoid vertical joints and to avoid the difficulty caused by the hoop reinforcement crossing the joints of shorter sets.





The length of the formwork to be provided is 15m and 16m for the inside and outside forms, respectively.

Since freshly placed concrete exerts considerable pressure outward pressure on the formwork, wires ties should be provided to prevent this pressure from forcing forms apart.

Forms should be oiled before use, and thoroughly cleaned and re-oiled before re-use.

The wall concrete should be 30MPa. The concrete should be placed within 30 minutes of mixing, in layers of 150mm for the full circumference of the wall. Care should be taken to ensure that the outer cover of concrete over reinforcement is well compacted. The wall should be thoroughly and continuously cured for at least 14 days after placing.

7. CONSTRUCTION OF THE APRON

The reservoir apron should be constructed as specified in the Drawing Ref. No.: RCR 1. The concrete should be cured for at least 14 days.

8. FIRST FILLING OF THE RESERVOIR

The reservoir should not be filled completely until the finished walls are at least 28 days old and have been actively cured for 14 days. It is recommended that the reservoir is filled to half its capacity 7 days after completion and three-quarters full after 14 days.

Upon the tank being filled to its maximum capacity, it should be checked for any leakages, cracks, damp patches and seepages.

If any leakages occur, the tank should be emptied and any cracks should be opened up and filled with the sealant used in the floor expansion joints. Damp areas on the walls should be given two coats of cement paint, each coat being carefully cured.

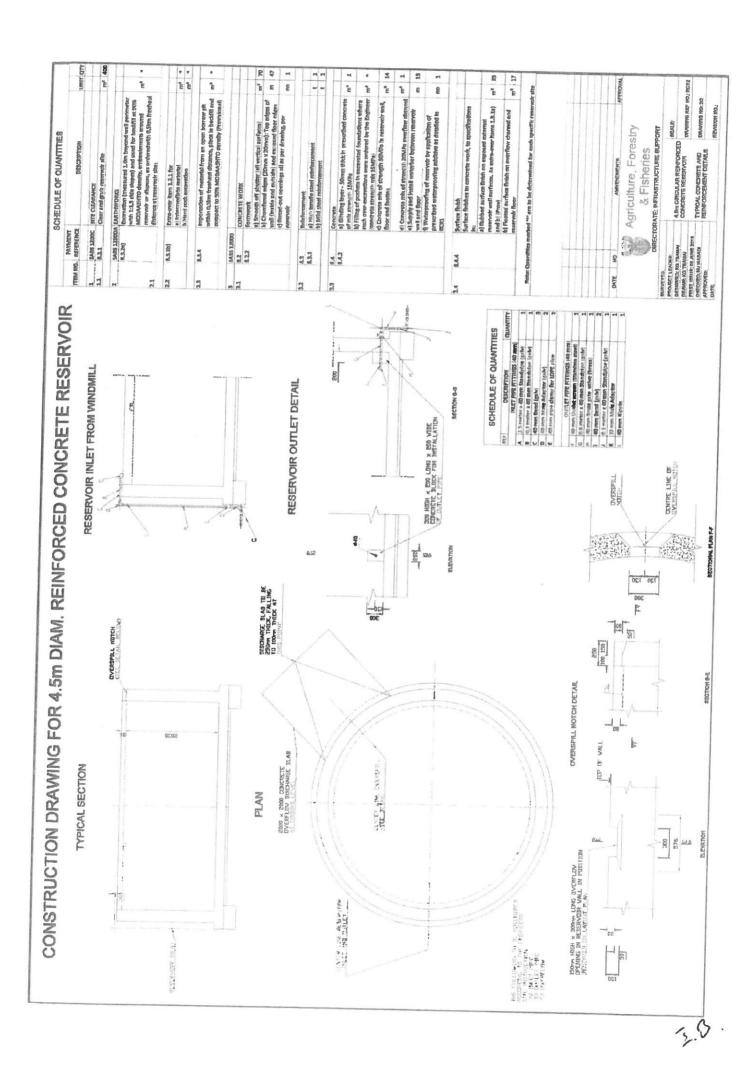


9. APPROVAL

Document compiled by:
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Document approved / not approved.
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Production Engineer
Document approved / not approved.
Vir DKM Motebejane (Pr. Eng.)
Acting Director: Infrastructure Support

15

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ANNEXURE A



agriculture, forestry & fisheries

Department, Agnostry and Pahentes REPUBLIC OF SOUTH AFRICA

IMPLEMENTATION PLAN GUIDELINE FOR THE EQUIPPING OF BOREHOLES

Month 6			
Month 3			

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Project Managenent, planning construction of 4.5m * concrets reservoir

DESCRIPTION OF ACTIVITY CLEARING AND INDERSORS SOTING OUT OF THE POOTING OTHER CONSTRUCTION OF WALL POOTINGS 3.1 Received on A.2 Conserve of places A.2 Conserve of places (ONESTRUCTION OF PRIMERIAL WALL A.2 CONSTRUCTION OF PRIMERIAL WALL A.2 CONSTRUCTION OF PRIMERIAL WALL (ONESTRUCTION OF PRIMERIAL WALL A.2 CONSTRUCTION OF PRIMERIAL WALL A.3 CONSTRUCTION OF PRIMERIAL WALL A.4 CONSTRUCTION OF PRIMERIAL WALL A.5	2 2	80 10 10 10 10 10 10 10 10 10 10 10 10 10	60 00	010	770	810 870	8	710 BB	200 000	E	88	29720 PINA 29720 PINA	PART TRANSPORT AND COME OF COM	8	100 Kg	ğ	250 000 500	1883 1883	Deta Deta Deta Deta Deta Deta Deta Deta	20d	De Des	\$60 80	P46 P46 P50
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THE NATIONAL TREASURY Republic of South Africa



GOVERNMENT PROCUREMENT: GENERAL CONDITIONS OF CONTRACT

July 2010

GOVERNMENT PROCUREMENT

GENERAL CONDITIONS OF CONTRACT July 2010

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 compiled 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.

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- 1.	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

- 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 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
- 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
- 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 fulfillment 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 canceling 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
 - (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 and in such manner as it 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 willful 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 is 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 33.1 Industrial Participation (NIP) Programme
- 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 General Conditions of Contract (revised July 2010)



Department of Agriculture, Forestry and Fisheries REPUBLIC OF SOUTH AFRICA SUPPLIER MAINTENANCE:

The Director-General: De

Department of Agriculture , Forestry and Fisheries

I/We hereby request and authorise you to pay any amounts, which may accrue to me/us to the credit of my/our account with the mentioned bank.

I/we understand that the credit transfers hereby authorised will be processed by computer through a system known as "ACB - Electronic Fund Transfer Service", and I/we understand that not additional advice of payment will be provided by my/our bank, but that the details of each payment will be printed on my/our bank statement or any accompanying voucher. (This does not apply where it is not customary for banks to furnish bank

I/we understand that the Department will supply a payment advice in the normal way, and that it will indicate the date on which the funds will be made available on my/our account.

This authority may be cancelled by me/us by giving thirty days notice by prepaid registered post. Please ensure information is validated as per required bank screens.

I/We understand that bank details provided should be exactly as per the records held by the bank.

I/We understand that the Department will not assume responsibility for any delayed payments, as a result of incorrect information supplied.

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