CIDB 8ME

CIDB REFERENCE NUMBER: _____

PROJECT NO: ERW2302/02

DESCRIPTION: RE-TENDER FOR APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY, DELIVERY AND INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

DEPARTMENT: INFRASTRUCTURE PLANNING AND PROJECTS

COMPULSORY VIRTUAL BRIEFING SESSION: ***Tuesday, 28th March 2023 at 10h30***

(Zoom Link : https://erwat-za.zoom.us/meeting/register/tJAudeuhqTovGNPleaYCA9aK5g37OaZv7D1g)

CLOSING DATE: ***Monday, 17th April 2023 @ 12h00***

NAME OF BIDDER:

_____

(BIDDING ENTITY) FULL NAME i.e. (CC, (PTY) LTD, LTD, JV, SOLE PROPRIETOR etc.)

TEL NUMBER :_____

FAX NUMBER :_____

NATIONAL TREASURY CSD NUMBER : MAAA _____

BIDDERS OFFER : RATES BASED

ERWAT STAMP

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

RE-TENDER APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

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T1.1 REQUEST FOR PROPOSAL NOTICE AND INVITATION

TENDER NOTICE

Bidders are hereby invited to submit tender offers for the project listed below:

Project No.	Project Description	CIDB Grading	Contact	Compulsory virtual Briefing Session Date	Closing Date	Tender Cost
ERW2302/02	RE-TENDER APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS	8 ME	011 929 7000	Tuesday, 28th March 2023 at 10h30 Kindly register to attend the briefing session	Monday, 17th April 2023 @ 12h00	R250

Potential bidders may download the bid document from the ERWAT tender site free of charge. Bidders must however note that it remains their responsibility to print the full document and any omissions submitted due to not printing the full tender document may result in your bid being null and void. Bidders may not alter the downloaded document in any form what so-ever.

A Compulsory clarification meeting with the representative of the employer will be held through a virtual briefing session - https://erwat-za.zoom.us/meeting/register/tJAudeuhqTovGNPleaYCA9aK5g37OaZv7D1g Registration is required

Please note**: this is a **compulsory briefing session** and no bids will be accepted if the bidder has not attended this session and documents will only be accepted from contractors whose names appear on the attendance register. **Kindly note that the company representative that attends this session will be accepted as a person with the relevant technical expertise applicable to this bid.

Completed Tenders in ink and clearly marked ***"Contract No.: ERW2302/02:* APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS** must be placed in the Tender Box, ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein/ Bronkhorstspruit), Kempton Park, not later than **Monday, 17th April 2023 @ 12h00** at which hour and date the Tenders will be opened in public at ERWAT Head Office. Tenders shall remain valid for a period of 120 days from closing date and no late, faxed, e-mailed or other form of Tender will be accepted.

All SCM Enquiries shall be addressed to Phumzile Mdlalose at phumzile.mdlalose@erwat.co.za/Brenda.matlala@erwat.co.za and All Technical Enquiries shall be addressed to Lehlohonolo Maneli at lehlohonolo.maneli@erwat.co.za

Bids will be evaluated in terms of ERWAT' Supply Chain Management Policy, the MFMA ACT 56 of 2003 SCM Regulations, the Preferential Procurement Policy Framework Act 2000 and its Regulations, 2022, the General Conditions of Contract for construction (GCC) 2015 and, if applicable, any other special conditions of contract.

"The Special Conditions of Contract are supplementary to that of the General Conditions of Contract. In the event of any contradiction between the GCC or any other applicable contractual agreement, the Municipal Financial Management Act and its applicable regulations will take precedence."

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (as defined in Regulation 44 of the Local Government: Municipal Supply Chain Management Regulations).

ERWAT accepts no responsibility for bidders accessing the tender notices from other sites/sources other than the newspapers used, its website (www.erwat.co.za/procurement) and the National Treasury's e-tender portal (www.etenders.gov.za).

17 MARCH 2023 (date of ad is available on the website and advertised)

ERWAT
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PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

T1.2 TENDER DATA

General

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of Board Notice 136 of 2015 in Government Gazette 38960 of 10 July 2015, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement. See www.cidb.org.za which is reproduced without amendment or alteration for the convenience of Bidders as an Annex to this Tender Data.

The Standard Conditions of Tender make several references to the Tender Data for details that apply specifically to this tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard Conditions of Tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

The following Standard Conditions of Tender as set out in the Tender Data below shall apply to this tender.

Clause No.	TENDER DATA
F1.1	**The Employer is:** Ekurhuleni Water Care Company (ERWAT) Hartebeestfontein Office Park R25 (Bapsfontein/Bronkhorstspruit Road) Kempton Park
F.1.2	**The Tender document's contents is as follows:** **<u>THE TENDER</u>** **Part T1: Tender Procedures (Pink)** T1.1 Tender notice and invitation to Tender T1.2 Tender Data

	Part T2: Returnable Documents (Pink) T2.1 List of returnable documents T2.2 Returnable schedules **THE CONTRACT** **Part C1: Agreements and Contract Data (Yellow)** C1.1 Form of Offer and Acceptance C1.2 Contract Data C1.3 Occupational Health and Safety C1.4 Corporate Governance Breach Clause **Part C2: Pricing Data (Yellow)** C2.1 Pricing Instructions C2.2 Bill of Quantities **Part C3: Scope of Work (Blue)** C3.1 Description of Works C3.2 Engineering C3.3 Construction C3.4 Management of Works C3.5 Health and Safety C3.6 Environmental Management During Construction
F1.3	**Interpretation** The Tender data and additional requirements contained in the Tender schedules that are included in the returnable documents are deemed to be part of these Tender conditions.
F.1.4	**The Employer's Representatives are:** **SCM: Phumzile Mdlalose - 011 929-7115** E-mail Address: phumzile.mdlaose@erwat.co.za/Brenda.matlala@erwat.co.za **Technical: - 011 929 7000** E-mail Address: Lehlohonolo.maneli@erwat.co.za Attention is drawn to the fact that verbal communication given by the Employer's representative prior to the close of Request for Proposals (Tender) will not be regarded as binding on the employer. Only information issued formally by the employer in writing to the bidders, under the signature of the Accounting Officer or his nominee will be regarded as amending the Tender documents. Tender offer communicated on paper shall be submitted as an original. In the event that no correspondence or communication is received from ERWAT within one hundred and twenty (120) days after the stipulated closing date and time of the Tender, the Tender proposal will be deemed to be unsuccessful.

F.1.5	**Reject or Accept** The Employer may accept or reject any variation, deviation, Tender offer, or alternative Tender offer, and may cancel the Tender process and reject all Tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a bidder for such a cancellation and rejection, but will give written reasons for such action upon written request to do so.
F.2.1	**CIDB Requirements** Only those Bidders who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a **8 ME class** of construction work, are eligible to have their tenders evaluated. Furthermore, the contractor grading designations (**8 ME class)** for construction works taking place over an agreed number of years (36 Months) shall be based on the entire contract value where such work is: • on an "as and when required" basis Joint ventures are eligible to submit tenders provided that: 1. Every member of the joint venture is registered with the CIDB: 2. The lead partner must be registered in a contractor grading designation not lower than one level below the required grading designation in the class of construction works under consideration. Please consult the CIDB website for the provisions for joint venture submission. 3. The combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a **8 ME Class** of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. 4. The bulk of the work for this Contract is Mechanical, however it may also include civil, electrical and control & instrumentation aspects. Should these portions be sub-contracted, each Sub-Contractor shall have a sufficient CIDB grading in their field to cover their portion of the Contract price. An indication of the portion of the total Contract price allocated to each Sub-Contractor as well as proof of each Sub-Contractors CIDB grading shall be included in the Bidders submissions.
F.2.2	**Cost of Bidding** Accept that the Employer will not compensate the Bidders for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.
F.2.3	**Check documents** The Bidder shall satisfy himself that the set of tender documents is complete and in accordance with the index. If any page has been omitted or duplicated, or if the script or dimensions, or anything else in the tender document is indistinct, or if doubt exists as to the meaning of any description, or if the

	tender document contains any obvious errors, the Bidder shall immediately notify the Employer accordingly, in writing, so that such discrepancy or indistinctness can be clarified and rectified, as ERWAT or the Agent will not accept any responsibility or consider any claim in connection with such discrepancy or indistinctness, which are not rectified during the tender period.
F.2.4	**Confidentiality and copyright of documents** Treat as confidential all matters arising in connection with the Tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a proposal offer in response to the invitation.
F2.5	**Reference Documents** Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference
F2.6	**Acknowledge Addenda** Acknowledge receipt of addenda to the proposal documents, which the employer may issue, and if necessary apply for an extension of the closing time stated in the Tender data, in order to take the addenda into account.
F.2.7	**The arrangements for a compulsory Virtual briefing/clarification meeting are:**
	Tuesday, 28th March 2023 at 10h30 — **Online:** Kindly register to attend the virtual compulsory briefing session at: https://erwat-za.zoom.us/meeting/register/tJAudeuhqTovGNPleaYCA9aK5g37OaZv7D1g
	No individual should represent more than one bidder at the compulsory briefing session. Non-completion in full of the fields required on the attendance register may lead to automatic disqualification. At least one member of the JV be represented at the compulsory clarification meeting.
F.2.8	**Seek clarification** Questions or queries must be submitted to the Employer at least five (5) working days before the stipulated closing date and time of the Tender. However, ERWAT shall not be liable nor assume liability for failure of the bidder to receive response to any questions and / or queries raised by the bidder by the closing time.
F.2.10	**Pricing the Tender** State the rates and prices in South African Rand (ZAR). • Prices shall be **FIXED** and **FIRM** for the first 12 months of the **Contract. Price increments will be based on MBD 3.2 pricing structure annually on the anniversary of this tender.**
F.2.11	**Alterations to documents** Bidder must not make any alterations or additions to the proposal documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the bidder. All signatories to the Tender offer shall sign next to all such alterations. Erasures and the use of masking fluid are prohibited. Copies are not allowed, only original documents will be accepted.

F.2.13	**Submitting a Tender offer** No late, faxed, emailed or other form of Tender will be accepted. Completed Tenders with attached documents, if any, must be submitted in Black ink in sealed envelopes and clearly marked: ***"CONTRACT NO ERW2302/02: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS"*** and must be placed in Tender Box at ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein / Bronkhorstspruit), Kempton Park. Accept that the tender submitted to the employer cannot be withdrawn or substituted. **No substitute tender offers will be considered**. All Tenders received by ERWAT will remain in the Company's possession.
F.2.14	**Information and data to be completed in all respects** To facilitate review of this Tender by ERWAT, it is requested that submissions conform to the following format: 1. **Coversheet:** List Tender Statement, the name of your firm, and the name, address and telephone number of a contact person for questions concerning the Tender submitted. 2. **Executive Summary:** Provide a brief overview of the project, description of the overall approach to the project, key features of the technologies offered and an overview of the performance guaranteed. 3. **Relevant Experience and Reference Projects:** Information of similar sized projects completed by the Bidder (in South Africa and worldwide) using the specific technologies requested must be provided. The referenced projects must be comparable in size, complexity and performance achieved to the tendered project. Operation and maintenance experience must also be included here. 4. **Project Team:** Provide a project team organogram showing the structure and composition of the proposed team. A CV highlighting the relevant project specific experience for each team member must be supplied. Permanent staff and contracted staff must be distinguished. 5. **Project Schedule:** A detailed project schedule must be submitted showing details with respect to the different phases of the project as well as the different aspects pertaining to engineering, procurement, construction, installation, commissioning and start up. The key milestones during the project must be indicated. 6. **Technical Specification & Datasheets**: All information asked for regarding the technical equipment shall be included here. Accept that Tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive. Responsive Tenders are ONLY those Tenders with all documents and pages, contained herein, that have been signed by the responsible person duly authorised to sign all documents indicated on the returnable document **"FORM C Authority of Signatory".**

	The above is to be read in conjunction with F3.11 below as well as the Project Specifications detailed in Section C3: Scope of Works.
F.2.15	**Monday, 17th April 2023 @ 12h00**
F.2.16	**Tender offer validity** The Tender offer validity period is 120 Days.
F2.18	**Provide other information** **The bidders are required to submit following documents and if requested to resubmit in case if it was not initially submitted, it will result in automatic disqualification:** (1) Proof of SARS Tax status (pin issued by the South African Revenue Services); (2) Completion of MBD 2, 3.2, 4, 5, 6.1, 7.1, 8 and 9 forms (3) Copy of municipal Statement not older than 3 months or letter from landlord stating that rates and taxes are not in arrears for more than 90 days from date of closing of bid. (4) In case of Joint Venture – the Joint Venture Agreement **NB: - Please note that non-compliance to specification may be deemed as an automatic disqualification. Service Providers must quote for all aspects as per the specification.**
F2.23	**Certificates** The Bidder is required to submit with his Tender a letter of intent from an approved insurer undertaking to provide the Performance Guarantee to the format included in Part C1.3 of this Tender Document.
F3.4	**Opening of tender** Tenders will be opened in public at the ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein / Bronkhorstspruit), Kempton Park.
F3.5	**Two-envelope System** A two-envelope procedure will **NOT** be followed.
F3.6	**Non-disclosure** After the opening of the Tender offers, no information relating to the clarification, determination of responsiveness, evaluation and comparison of Tender offers and recommendations concerning the award of the Tender shall be disclosed to any other Bidder or persons not concerned with such process until the award of the Tender has been announced by ERWAT.

F3.9	**Arithmetical errors, omissionsand discrepancies** ERWAT is to check BID offers for arithmetical errors in the following manner: a) Where there is a discrepancy between the amounts in words and amounts in figures, the amount in words shall govern. b) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected. c) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the Bidder's addition of prices, the total of the prices shall govern and the Bidder will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices. Consider the rejection of a tender offer if the Bidder does not correct or accept the correction of the arithmetical error in the manner described above.
F3.11	**1. Evaluation of tender offers** The Bidders notice is drawn to the fact that the evaluation, adjudication and awarding of this Tender will be in terms of the Supply Chain Management Policy of ERWAT and the Preferential Procurement Regulations of 2022. If the submitted Tender does not comply with the Tender conditions, the Tender may be rejected. If specifications are not met, the Tender may also be rejected. With regard to the above, certain actions or errors are unacceptable, and warrant **REJECTION OF THE TENDER,** for example: ▪ Proof of SARS Tax status (pin issued by the South African Revenue Services); ▪ Non submission of company registration certificates. ▪ Pages that were to be completed being removed from the Tender document and have therefore not been submitted. ▪ Failure to fully complete form of offer. ▪ Scratching out without initialing next to the amended rates or information. ▪ Writing over / painting out rates / the use of Tippex/correction fluid or any erasable ink. ▪ Failure to attend compulsory briefing meetings ▪ The Tender has not been properly signed by a party having the authority to do so, according to the **Form C– "Authority for Signatory".** ▪ No authority for signatory submitted. ▪ Particulars required in respect of the proposal have not been provided: non- compliance of Tender requirements and/or specifications. ▪ The Bidder's attempts to influence, or has in fact influenced the evaluation and/or awarding of the contract. ▪ The Proposal has been submitted after the relevant closing date and time. ▪ If any municipal rates and taxes or municipal service charges owed by that Bidder or any of its directors to the company, or to any other company or municipal entity, are in arrears for more than three months (90 days). ▪ If any Bidder who during the last five years has failed to perform satisfactorily on a previous contract with the company or any other organ of state after written notice was given to that Bidder that performance was unsatisfactory.

2. Good standing with SA Revenue Services

- Determine whether the bidders tax matters are in order as provided for by SARS.
- The Bidder must complete the MBD 2 form in the returnable schedule and or attach their valid SARS Pin to verify their Tax matters to the designated page of the Tender document.

If the Tender does not meet the requirements contained in the ERWAT Supply Chain Policy, and the mentioned framework, it will be rejected and may not subsequently be made acceptable by correction or withdrawal of the non-conforming deviation or reservation.

3. Penalties

ERWAT will, if upon investigation it is found that a preference in terms of the Preferential Procurement Policy Framework Act, 2000 and these regulations has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, one or more of the following penalties will be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Bidder.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, which was made in the Tender.
- Restrict the firm, its shareholders and directors on obtaining any business from ERWAT for a period of 5 years and blacklisted on the National Treasury database of restricted suppliers.

4. Evaluation Criteria

ERWAT will establish a Bid Evaluation Committee (BEC) whose responsibility it is to make recommendations to the Bid Adjudication Committee (BAC). The Bid Evaluation Committee will short list and evaluate the bid document in accordance with the criteria below and make recommendations to the BAC.

1) Pre compliance evaluation to be done and pre-qualified bidders goes through for the functionality evaluation. Where some pre compliance information is not provided the ERWAT supply chain will contact the responsible bidder to submit within 5 working days and failure to do so will result in disqualification.

2) Score Bid evaluation points for price and specific goals points

3) Calculate total Bid evaluation points, to two decimal places

4) Rank Bid offers from the highest number of Bid evaluation points to the lowest

5) Recommend Bidders with the highest number of Bid evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.

FUNCTIONALITY CRITERIA: -

Note: The minimum required score for functionality is stipulated in the functionality table listed elsewhere in the document. Bidders scoring less than the stipulated threshold on functionality shall not proceed to the next stage of the evaluation.

	Functionality criteria maximum points in respect of each criterion shall be as set out at the bottom of this table. All Tender submission will be evaluated by at least three evaluators against the Table below. Bidders shall ensure that their tender submissions are sufficiently detailed and that all required information is included in their submissions. Information not provided will result in zero points awarded for the respective item. **Tender evaluation points** Tender evaluation points will be allocated as per the Supply Chain Management policy and the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022 including the following: The points allocation for this Tender is: a) Price: 90 b) Specific Goals: 10 Regulations of disputes, objections, complaints and queries will be handled in accordance with the Supply Chain Management Policy of ERWAT.
F3.17	**Provide copies of the contracts** The number of paper copies of the signed contract to be provided by the Employer is **one**.
	The additional conditions of the proposal are: **1)** ERWAT may also request that the Bidder provide written evidence that his financial, labour and resources are adequate for carrying out the project. **2)** ERWAT reserves the right to appoint a firm of chartered accountants and auditors and / or execute any other financial investigations on the financial resources of any Bidder. The Bidders shall provide all reasonable assistance in such investigations **3)** The number of bidders that will be appointed and the allocation of activities or items per bidder will be at ERWAT's discretion **4)** The lowest bidding price will not necessarily be accepted and ERWAT reserves the right to determine market related rate to be offered to the successful bidders. **5)** The rates of the highest scoring bidder subject to market evaluation (market related rate) will be offered to the remaining highest scoring bidders

1.1 TECHNICAL / FUNCTIONALITY EVALUATION

Potential service providers will have to achieve a minimum of **75 points out of 100** for their technical proposals before their financial proposals and Specific Goals are evaluated. This is required so that there is a level of comfort that the potential service provider can deliver the project with the required professionalism and quality.

1.1.1 SCORING PROCESS

The Technical / Functional Evaluation Task Team will be established to determine the following:

- Whether or not the Bidder understood the project specifications.
- The bidders experience with similar projects.
- The suitability of the bidder's proposed Plant and Equipment.
- The quality of the methodology proposed.
- The qualifications and experience of the key staff proposed.
- The suitability of Sub-Contractors proposed.

No alteration of technical / functionality proposals will be permitted after the deadline for receipt of bids. Questions may be asked for clarification needed to evaluate their proposals, but bidders would not be permitted to change the substance or price of their bids after bid opening. Requests for clarification and the bidder's responses would be made in writing. No interviews will be conducted in this regard.

SCORING CRITERIA FOR CIDB CONTRACTS:

The score for the Technical / Functionality Evaluation will be calculated in accordance with the table below:

CRITERION	CRITERION DETAILS	POINTS
Company Experience Only signed completion certificates and reference letters on the letterheads of the previous client/employer with a clear description of works, contract value, contact person, and contact details of the contact person (day telephone number and company email address) will be accepted. **Submission must be dated and not older than ten (10) years, from the date of completion.**	**Company experience in Installation of Pumps as per any one of the categories listed under this tender, provide completion certificates and/ or reference letter for completed projects bidders' client's letterhead:** • 5 and More Letters/Certificates = 30 • 4 Letters/Certificates = 24 • 3 Letters/Certificates = 18 • 2 Letters/Certificates = 12 • 1 Letter/Certificate = 6 • No information submitted = 0 Appointment Letters, Contractual Agreements, and Invoices will not be accepted. Each letter should represent the entire works completed not section or plants partially completed.	**30**
Expertise of key staff Bidders to provide Curriculum Vitae(s) to prove the relevant experience as well as complete pro-forma CVs in full.	**Expertise of key staff**: No points shall be allocated for 0 – 23 Months experience, including submission of irrelevant experience that does not speak to the Scope of Works for this Contract. Certified copies of the qualifications must also be attached. Experience of key staff will be evaluated based on the years/ months post qualification attainment up to date of tender closure. <u>Site Supervisor with a with a minimum of National Diploma Mechanical Engineering: (10) points</u> • No submission/No Experience = 0 • 24 – 48 Months' Experience = 3 • 49 – 72 Months' Experience = 7 • 73 and More Months' Experience = 10 <u>Health and Safety Officer with Safety Management Certification: (10) points</u> • No submission/No Experience = 0 • 24 – 48 Months' Experience = 3 • 49 – 72 Months' Experience = 7 • 73 and More Months' Experience = 10 <u>Installation Fitter with a trade test in Fitting: (5) points</u> • No submission/No Experience = 0 • 24 – 48 Months' Experience = 1 • 49 – 72 Months' Experience = 3 • 73 and More Months' Experience = 5 <u>Installation Rigger with a trade test in Rigging: (5) points</u> • No submission/No Experience = 0 • 24 – 48 Months' Experience = 1 • 49 – 72 Months' Experience = 3 • 73 and More Months' Experience = 5	**30**

Financial Resources **Kindly submit a bank rating from the companies' bank institution (not older than twelve (12) months)**	Based on reference checks with Bidder's Bank. • Bank Rating A - Undoubted for the amount of enquiry = 40 • Bank Rating B - Good for the amount of your enquiry = 25 • Bank Rating C - Good for the amount quoted, if strictly in the way of business = 18 • Bank Rating D - Fair trade risk for the amount of your enquiry =12 • Bank Rating E - Figures considered too high = 6 • Failure to produce a bank document explicitly stating the Bank rating will result in 0 points being awarded in this category = 0	**40**
TOTAL	**Bidder must score a minimum of 75 points to be considered for further evaluation**	**100**

ERWAT
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T 2.1 LIST OF RETURNABLE DOCUMENTS

1. Failure to fully complete and sign the relevant returnable documents shall render such a tender offer unresponsive.

2. Bidders shall note that their signatures appended to each returnable form represents a declaration that they vouch for the accuracy and correctness of the information provided, including the information provided by candidates proposed for the specified key positions.

3. Notwithstanding any check or audit conducted by or on behalf of the Employer, the information provided in the returnable documents is accepted in good faith and as justification for entering into a contract with a Bidder. If subsequently any information is found to be incorrect such discovery shall be taken as willful misrepresentation by that Bidder to induce the contract. In such event the Employer has the discretionary right to terminate the contract.

THE BIDDER MUST COMPLETE AND SIGN THE FOLLOWING RETURNABLE SCHEDULES:

RETURNABLE SCHEDULES REQUIRED FOR TENDER EVALUATION PURPOSES

MBD 1	INVITATION TO BID
MBD 2	TAX CLEARANCE REQUIREMENTS
MBD 3.2	PRICING STRUCTURE: NON-FIRM PRICES
MBD 4	DECLARATION OF INTEREST
MBD 5	DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)
MBD 6.1	PREFERENCE POINTS CLAIM FORM
MBD 7.1	CONTRACT FORM: PURCHASE OF GOODS/SERVICES
	PART 1: TO BE COMPLETED BY THE BIDDER
	PART 2: TO BE COMPLETED BY ERWAT
MBD 8	DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES
MBD 9	CERTIFICATE OF INDEPENDENT BID DETERMINATION
FORM A	MUNICIPAL SERVICES, RATES AND TAXES OR RENTAL AGREEMENT WITH LANDLORD: Copy of Municipal Statement not older than 3 months before date of closing of bid OR Letter from landlord stating that you are renting from his/her property OR a Copy of Lease agreement and Contact details. Rates and taxes must not be in arrears for longer than 90 (ninety) days of date of closing of bid.
FORM B	NATIONAL TREASURY CENTRALISED SUPPLIER DATABASE
FORM C	AUTHORITY OF SIGNATORY
FORM D	FINANCIAL REFERENCES /BIDDER'S CREDIT RATING AND BANK DETAILS
FORM E	RECORD OF ADDENDA TO TENDER DOCUMENTS
FORM F	CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO
FORM G	OCCUPATIONAL HEALTH AND SAFETY AGREEMENT
FORM H	CERTIFIED COPY OF ID DOCUMENT/S OF OWNERS/MEMBERS/SHAREHOLDERS
FORM I	CURRENT CERTIFICATE OF GOOD STANDING FROM COMPENSATION COMMISSIONER
FORM K	EXPERTISE OF THE KEY PERSONNEL
FORM L	COPY OF COMPANY REGISTRATION DOCUMENTS

FORM M	BACKGROUND AND WORK EXPERIENCE

Returnable Documents that will be incorporated into the contract

C1.1	OFFER PORTION OF FORM OF OFFER AND ACCEPTANCE
C1.2	CONTRACT DATA (PART 2)

T2.1.1 IMPORTANT: Required Returnable Documentation:

Please ensure that the following supporting documents are attached to your Bid Document. Failure to submit the below mentioned documents will result in disqualification of your bid.

Item	Description of Document/Proof Sought	To be completed by the Bidder: Please fill in Yes or No if Proof/ Documentation attached	For Office Use Only Verified by SCM Official: Please fill in Yes or No if Proof/ Documentation attached
1	A valid Tax Clearance Certificate/SARS issued pin		
2	Certified Copy of ID documents of owners/members/shareholders (see Bidders Information Section).		
3	Copy of Municipal Statement not older than 3 months OR Letter from landlord stating that you are renting from his/her property OR Copy of Lease agreement and Contact details (Statement and arrears should not be older than 3 months)		
4	Current Certificate of Good Standing from Compensation Commissioner		
5	Expertise of the Key Personnel		
6	Occupational Health & Safety Plan		

T2.1.2 Other Returnable Documents required for the evaluation

Item	Description of Document/Proof Sought	To be completed by the Bidder: Please fill in Yes or No if Proof/ Documentation attached	For Office Use Only Verified by SCM Official: Please fill in Yes or No if Proof/ Documentation attached
1.	Copy of Company/ Registration Documents (see Bidders Information Section). – Failure to submit will result in disqualification.		
2.	For companies: A letter from the auditors confirming shareholding percentages. – Failure to submit will result in disqualification.		
3.	Audited Financial Statements for the past three financial years - failure to submit this information will result in disqualification		
4.	Certificate that there are no outstanding commitments for municipal rates and taxes for more than 30 days – failure to submit this information will result in disqualification.		
5.	Proof of CSD registration (Supplier number and unique reference ID) – failure to supply this information will result in disqualification. This tender may not be awarded to a person who is not registered on the CSD database.		

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

T2.2 RETURNABLE SCHEDULES

RETURNABLE DOCUMENTS REQUIRED FOR TENDER EVALUATION PURPOSES

COMPULSORY ENTERPRISE QUESTIONNAIRE

The successful bidder will be required to fill in and sign a written Contract Form (MBD7).

Completed Tender documents with attached documents, if any, must be completed in Ink and submitted in a sealed envelope and clearly marked *"**CONTRACT NO: ERW2302/02**"* to be placed in Tender Box at ERWAT Head Office, Hartebeestfontein Office Park, R25 (Bapsfontein / Bronkhorstspruit), Kempton Park.

Bidders should ensure that bids are in the tender box at the closing time and date, including couriered documents. Any late documents will not be accepted for consideration.

The box is generally open during office hours: 07:00 – 17:00 Mondays to Fridays.

N.B *.: Bidders must ensure that they submit the full bidding document with all the pages, all* requested information completed and signed, including all supporting documents in the areas provided.

All bids must be submitted on the official forms – (not to be re-typed). Failure to complete the document in full may result in disqualification.

Bids completed in pencil, re-typed or where correction tape/fluid is used will be regarded as invalid bids.

THIS BID IS SUBJECT TO THE GENERAL CONDITIONS OF CONTRACT (GCC) 2015 AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT

THIS BID WILL BE EVALUATED AND ADJUDICATED ACCORDING TO THE FOLLOWING CRITERIA:

1. Relevant specifications and technical proposals
2. Value for money
3. Capability to execute the contract
4. PPPFA & related regulations
5. Standard conditions of bidding
6. Special conditions of contract
7. General conditions of contract
8. Supporting documents where required

NB: NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE (see definition on MBD 4 attached)

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

In the case of a Joint Venture – This page is to be completed and submitted in respect of each partner

NAME OF ENTERPRISE					
PHYSICAL ADDRESS:					
POSTAL ADDRESS:					
CONTACT PERSON					
TEL NO: _____ **CELL NO:** _____ **FAX NO:** _____ **EMAIL:** _____					
COMPANY REGISTRATION NUMBER:					
VAT NUMBER:		**TAX REF NUMBER:**			
CENTRALISED SUPPLIER DATABASE (CSD) NUMBER:		**MAAA** _____			
CIDB REGISTRATION NUMBER					
CIDB GRADING					
ERWAT VENDOR NUMBER (NOT COMPULSORY):					
BIDDERS OFFER: Please note that this is rates based tender. The contract is limited to Purchase orders issued within the available budget allocated for such on an as and when required basis.					
TOTAL NUMBER OF ITEMS OFFERED					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS/SERVICES/WORKS OFFERED?			**Yes**		**No**

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS/ SERVICES/ WORKS OFFERED?

YES		**NO**	

NAME AND SURNAME: _____

SIGNATURE OF BIDDER: _____

CAPACITY UNDER WHICH THIS BID IS SIGNED: _____

DATE: _____

ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE AND TECHNICAL INFORMATION MAY BE DIRECTED TO:

SUPPLY CHAIN BIDDING PROCEDURES:

CONTACT PERSON: Ms. Phumzile Mdlalose

CONTACT DETAILS: (TEL) 011 929 7115

E-MAIL: phumzile.mdlalose@erwat.co.za/Brenda.matlala@erwat.co.za

TECHNICAL QUERIES MAY BE DIRECTED TO:

CONTACT PERSON: Mr. Lehlohonolo Maneli

CONTACT DETAILS: (TEL) 011 929 7175

E-MAIL. Lehlohonolo.maneli@erwat.co.za

MBD 2

TAX CLEARANCE CERTFICATE REQUIREMENT

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

NEED A TAX CLEARANCE? GO ONLINE

- Electronically request your Tax Compliance Status which will include a unique PIN which you can provide to any third party (if requested) to enable them to verify your tax compliance status online via e-Filing.
- Request a TCC via e-filing which will give you the option to print the TCC.
- Or request a TCC at a SARS branch where a SARS agent will be able to print or e-mail the TCC to you.
- To register for e-filing go to: www.sarsefiling.co.za

A tax compliant status is a holistic view of your tax compliance level across all your registered tax types.

Is your tax compliance status green?

- Ensure all tax returns are submitted
- No outstanding debt owed to SARS
- SARS has been notified of any change of residential or business address
- Your business is registered for all required tax types e.g. PAYE, VAT, income tax.

Check your tax compliance status by logging onto your e-filing profile and viewing your "my compliance Profile" and rectify any non-compliance.

THIRD PARTY AUTHORISATION TO VIEW BIDDER TCS:

To assist with the evaluation process of your bid we require your consent to check your SARS tax compliance via e-filing. Kindly complete the table below authorising MLM to check TCC for tender purposes only.

TCS Details	
Tax payer name	
Trading Name	
Purpose of request	TENDER
Request Reference number	
PIN	
PIN EXPIRY DATE	

Note: Bidders may attach their Tax compliance status printout to the bidding document.

I, _____ in my capacity as _____ duly appointed as authorised signatory holder, hereby grant **ERWAT** permission to check the TCC status of _____ and it is duly understood that the search is for tender purposes only.

NAME AND SURNAME _____ **DESIGNATION** _____

DATE _____ **SIGNATURE** _____

FOR ERWAT OFFICE USE ONLY:
VERIFIED ☐YES / ☐NO

MBD 3.2

PRICING SCHEDULE – NON-FIRM PRICES (PURCHASES)

NOTE: PRICE ADJUSTMENTS WILL BE ALLOWED AT THE PERIODS AND TIMES SPECIFIED IN THE BIDDING DOCUMENTS.

IN CASES WHERE DIFFERENT DELIVERY POINTS INFLUENCE THE PRICING, A SEPARATE PRICING SCHEDULE MUST BE SUBMITTED FOR EACH DELIVERY POINT

Name of Bidder: _____	Bid number: **ERW2302/02:**
Closing Time : **12:00 pm**	Closing Date: **Monday, 17th April 2023**

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

ITEM NO.	QUANTITY	DESCRIPTION	BID PRICE IN RSA CURRENCY **(ALL APPLICABLE TAXES INCUDED)

Kindly refer to the Bill of quantities.

- Required by: **EKURHULENI WATER CARE WORKS**
- At: **INFRSTRUCTURE PROJECTS AND PLANNING**
- Brand and model …..……
-
- Country of origin ……..……
- Does the offer comply with the specification(s)? *YES/NO
- If not to specification, indicate deviation(s) …….
- Period required for delivery …….
- Delivery: *Firm/Not firm

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

*Delete if not applicable

MBD 3.2

PRICE ADJUSTMENTS

A NON-FIRM PRICES SUBJECT TO ESCALATION

1. IN CASES OF PERIOD CONTRACTS, NON-FIRM PRICES WILL BE ADJUSTED (LOADED) WITH THE ASSESSED CONTRACT PRICE ADJUSTMENTS IMPLICIT IN NON FIRM PRICES WHEN CALCULATING THE COMPARATIVE PRICES

2. IN THIS CATEGORY PRICE ESCALATIONS WILL ONLY BE CONSIDERED IN TERMS OF THE FOLLOWING FORMULA:

$$Pa = (1-V)Pt\left(D1\frac{R1t}{R1o} + D2\frac{R2t}{R2o} + D3\frac{R3t}{R3o} + D4\frac{R4t}{R4o} \right) + VPt$$

Where:

Pa	=	The new escalated price to be calculated.
(1-V) Pt	=	85% of the original bid price. **Note that Pt must always be the original bid price and not an escalated price.**
D1, D2..	=	Each factor of the bid price e.g. Labour, transport, clothing, footwear, etc. The total of the various factors D1,D2…etc. must add up to 100%.
R1t, R2t……	=	Index figure obtained from new index (depends on the number of factors used).
R1o, R2o	=	Index figure at time of bidding.
VPt	=	15% of the original bid price. This portion of the bid price remains firm i.e. it is not subject to any price escalations.

The following index/indices must be used to calculate your bid price:

Index……. Dated……. Index……. Dated……. Index……. Dated…….

Index……. Dated……. Index……. Dated……. Index……. Dated…….

FURNISH A BREAKDOWN OF YOUR PRICE IN TERMS OF ABOVE-MENTIONED FORMULA. THE TOTAL OF THE VARIOUS FACTORS MUST ADD UP TO 100%.

FACTOR (D1, D2 etc. eg. Labour, transport etc.)	PERCENTAGE OF BID PRICE

MBD 3.2

PRICES SUBJECT TO RATE OF EXCHANGE VARIATIONS

Please furnish full particulars of your financial institution, state the currencies used in the conversion of the prices of the items to South African currency, which portion of the price is subject to rate of exchange variations and the amounts remitted abroad.

PARTICULARS OF FINANCIAL INSTITUTION	ITEM NO	PRICE	CURRENCY	RATE	PORTION OF PRICE SUBJECT TO ROE	AMOUNT IN FOREIGN CURRENCY REMITTED ABROAD
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		
				ZAR=		

Adjustments for rate of exchange variations during the contract period will be calculated by using the average monthly exchange rates as issued by your commercial bank for the periods indicated hereunder: (Proof from bank required)

AVERAGE MONTHLY EXCHANGE RATES FOR THE PERIOD:	DATE DOCUMENTATION MUST BE SUBMITTED TO THIS OFFICE	DATE FROM WHICH NEW CALCULATED PRICES WILL BECOME EFFECTIVE	DATE UNTIL WHICH NEW CALCULATED PRICE WILL BE EFFECTIVE

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state.

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3. A Person who is an advisor or consultant contracted with the municipality.

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

   4.1 Full Name of bidder or his or her representative:

   _____

   4.2 Identity Number: | | | | | | | | | | | | | |

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

   _____

   4.4 Company Registration Number: _____

   4.5 Tax Reference Number: _____

   4.6 VAT Registration Number: _____

   4.7 The names of all directors / trustees / shareholders members, their individual identity numbers and state employee numbers must be indicated in paragraph 5 below.

   4.8 Are you presently in the service of the state? **YES / NO**
   If so, furnish particulars.

   _____

   _____

   4.9 Have you been in the service of the state for the past twelve months?

   YES / NO

   If so, furnish particulars.

   _____

   _____

   4.10 Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?

YES / NO

If so, furnish particulars.

_____

_____

4.11 Are you, aware of any relationship (family, friend, other) between any other bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?

YES / NO

If so, furnish particulars.

_____

_____

4.12 Are any of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES / NO

If so, furnish particulars.

_____

_____

4.13 Are any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in service of the state?

YES / NO

If so, furnish particulars.

_____

_____

4.14 Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract?

YES / NO

If so, furnish particulars.

_____

_____

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

FULL NAME	IDENTITY NUMBER	STATE EMPLOYEE NUMBER

1 MSCM Regulations: "in the service of the state" means to be –

(a) A member of –
- *any municipal council/entity;*
- *any provincial legislature; or*
- *the national Assembly or the national Council of provinces;*

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the public Finance Management Act, 1999 (Act No 1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature.

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

CERTIFICATION

I, THE UNDERSIGNED (NAME) _____
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

_____ _____
SIGNATURE **DATE**

_____ _____
POSITION **NAME OF BIDDER**

MBD 5

DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (ALL APPLICABLE TAXES INCLUDED)

For all procurement expected to exceed R10 million (all applicable taxes included), bidders must complete the following questionnaire:

**** Delete if not applicable***

1. Are you by law required to prepare annual financial statements for auditing?

***YES/NO**

1.1 If yes, submit audited annual financial statements for the past three years or since the date of establishment if established during the past three years.

_____

_____

2. Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days?

***YES/NO**

2.1 If no, this serves to certify that the bidder has no undisputed commitments for municipal services towards any municipality for more than three months or other service provider in respect of which payment is overdue for more than 30 days.

2.2 If yes, provide particulars.

_____

_____

_____

_____

3. Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract?

***YES/ NO**

3.1 If yes, furnish particulars

_____

_____

4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?

YES / NO

4.1 If yes, furnish particulars

_____

_____

CERTIFICATION

I, THE UNDERSIGNED (NAME) _____

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS CORRECT.

I ACCEPT THAT THE STATE MAY ACT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE FALSE.

_____ _____

SIGNATURE **DATE**

_____ _____

POSITION **NAME OF BIDDER**

MBD 6.1

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

---

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

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

1.2 **To be completed by the organ of state**

a) The applicable preference point system for this tender is the 90/10 preference point system.

b) The 90/10 preference point system will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender shall be awarded for:
(a) Price; and
(b) Specific Goals.

1.4 **To be completed by the organ of state:**
The maximum points for this tender are allocated as follows:

	POINTS
PRICE	90
SPECIFIC GOALS	10
Total points for Price and SPECIFIC GOALS	**100**

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

2.1 **POINTS AWARDED FOR PRICE**

2.1.1 THE 90/10 PREFERENCE POINT SYSTEMS

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

90/10

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

Where
Ps = Points scored for price of tender under consideration
Pt = Price of tender under consideration
Pmin = Price of lowest acceptable tender

3. POINTS AWARDED FOR SPECIFIC GOALS

3.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

Table 1: Specific goals for the tender and points claimed are indicated per the table below.
***Note to tenderers: The tenderer must indicate how they claim points for each preference point system.*)**

The specific goals allocated points in terms of this tender	**Number of points allocated (90/10 system) (To be completed by the organ of state)**
EME or QSE 51% owned by women	2
EME or QSE 51% owned by youth	2
EME or QSE 51% owned by people with disabilities	2
EME or QSE 51% owned by military veterans	2
EME or QSE within the boundaries of Ekurhuleni Municipality	2

The above information will be verified in accordance with the bidders B-BBEE certificate, and or a certificate from the companies and intellectual property commission (CIPC), the department of Military Veterans and or other supporting documents. All supporting evidence must be submitted in order to claim the preferential procurement points claimed. ERWAT reserves the right to verify the information submitted.

In the case of multi-parties (Joint ventures, consortiums, partnerships, etc.), allocation of points will be calculated by adding the individual parties in the JV, etc. ownership % together; divide the total by the number of parties in the respective joint ventures, consortiums, partnerships, etc. The average % will thus be the indicating factor for the number of points to be scored limited to the maximum available points.

e.g. Joint venture:

Party 1 = 51% EME/QSE owned by women
Party 2 = 100% EME/QSE owned by women
= **151%** / 2 parties in the JV = 75% and will score = 2 points

The above principle will apply to points 1, 2, 3 & 4 indicated in Table 1 above.

For point 5: The collective JV agreement's address, or the Lead JV partners' domicile Address will be utilized for scoring of points.

DECLARATION WITH REGARD TO COMPANY/FIRM

3.2. Name of company/firm…….

3.3. Company registration number: ……...

3.4. TYPE OF COMPANY/ FIRM

- □ Partnership/Joint Venture / Consortium
- □ One-person business/sole propriety
- □ Close corporation
- □ Public Company
- □ Personal Liability Company
- □ (Pty) Limited
- □ Non-Profit Company
- □ State Owned Company

[TICK APPLICABLE BOX]

3.5. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

i) The information furnished is true and correct;
ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –

(a) disqualify the person from the tendering process;
(b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
(c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
(d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted 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, if deemed necessary.

……

SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME: …….

DATE: ……

ADDRESS: ……

……

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

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

PART 1 (TO BE FILLED IN BY THE BIDDER)

1. I hereby undertake to supply all or any of the goods and/or works described in the attached bidding documents to (name of institution)…….…… in accordance with the requirements and specifications stipulated in bid number **ERW2302/02** at the price/s quoted. My offer/s remain binding upon me and open for acceptance by the purchaser during the validity period indicated and calculated from the closing time of bid.

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

   (i) Bidding documents, *viz*
   - Invitation to bid;
   - Tax clearance certificate;
   - Pricing schedule(s);
   - Technical Specification(s);
   - Specific Goals (refer to MBD 6.1)
   - Declaration of interest;
   - Declaration of bidder's past SCM practices;
   - Certificate of Independent Bid Determination;
   - Special Conditions of Contract;

   (ii) General Conditions of Contract; and
   (iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the goods and/or works specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.

5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.

6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) ……

CAPACITY ……

SIGNATURE ……

NAME OF FIRM ……

DATE ……

WITNESSES

1 ……

MBD 7.1

CONTRACT FORM - PURCHASE OF GOODS/WORKS

PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I…… in my capacity as……..….. accept your bid under reference number **ERW2302/02** dated……for the supply of goods/works indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating delivery instructions is forthcoming.

3. I undertake to make payment for the goods/works delivered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice accompanied by the delivery note.

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT ……ON……..

NAME (PRINT) …….

SIGNATURE …….

OFFICIAL STAMP

WITNESSES

1. ……

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

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

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

3 The bid of any bidder may be rejected if that bidder, or any of its directors have:

a. abused the company's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
b. been convicted for fraud or corruption during the past five years;
c. wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
d. Been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

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

Item	Question	Yes	No
4.1	Is the bidder or any of its directors listed on the National Treasury's Database of Restricted Suppliers as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this Database were informed in writing of this restriction by the Accounting Officer/Authority of the institution that imposed the restriction after the *audi alteram partem* rule was applied). The Database of Restricted Suppliers now resides on the National Treasury's website (www.treasury.gov.za) and can be accessed by clicking on its link at the bottom of the home page.	Yes ☐	No ☐
4.1.1	If so, furnish particulars:		
4.2	Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? The Register for Tender Defaulters can be accessed on the National Treasury's website (www.treasury.gov.za) by clicking on its link at the bottom of the home page.	Yes ☐	No ☐

4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past five years?	Yes ☐	No ☐
4.3.1	If so, furnish particulars:		
4.4	Does the bidder or any of its directors owe any municipal rates and taxes or municipal charges to the company / municipal entity, or to any other municipality / municipal entity, that is in arrears for more than three months?	Yes ☐	No ☐
4.4.1	If so, furnish particulars:		
4.5	Was any contract between the bidder and the municipality / municipal entity or any other organ of state terminated during the past five years on account of failure to perform on or comply with the contract?	Yes ☐	No ☐
4.7.1	If so, furnish particulars:		

CERTIFICATION

I, THE UNDERSIGNED (FULL NAME_____

CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION FORM IS TRUE AND CORRECT.

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

_____

SIGNATURE ON BEHALF OF BIDDER

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

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

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

3. Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

    a. take all reasonable steps to prevent such abuse;

    b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

    c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

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

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

DESCRIPTION: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

PROJECT NO: ERW2302/02

in response to the invitation for the bid made by:

EKURHULENI WATER CARE COMPANY (ERWAT)
(Name of Municipality/Entity)

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

I certify, on behalf of _____(Name of Bidder) that:

1. I have read and I understand the contents of this Certificate;

2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;

3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;

4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;

5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

    (a) has been requested to submit a bid in response to this bid invitation;

    (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and

    (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

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

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

    (a) prices;
    (b) geographical area where product or service will be rendered (market allocation)
    (c) methods, factors or formulas used to calculate prices;
    (d) the intention or decision to submit or not to submit, a bid;

(e) the submission of a bid which does not meet the specifications and conditions of the bid; or
(f) bidding with the intention not to win the bid.

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

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

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 BID**

FORM A

MUNICIPAL SERVICES, RATES AND TAXES CLEARANCE CERTIFICATE FOR SUPPLY CHAIN MANAGEMENT PURPOSE

The purpose of this form is to obtain prove that municipal services, rates and taxes of the service provider are **not more than three months in arrears** with the relevant municipality / landlord in the municipal area where the service provider conduct his / her business. Kindly attach the latest municipal rates and taxes account not older than 3 months from date of advertising of bid.

Where bidders are not owners of a property and cannot submit a copy of the municipal account, the following must be completed together with a Rental/lease agreement:

(TO BE COMPLETED BY THE LANDLORD)			
Name of the Landlord:			
Property Physical Address:			
Please tick below		**Yes**	**No**
Rental:	in arrears for more than 3 months		
Municipal services:	in arrears for more than 3 months		
Landlord Signature:			
Date: _____ **Landlord's business stamp here (where applicable)**			

FORM B

CONFIRMATION OF REGISTRATION ON NATIONAL TREASURY CENTRALISED SUPPLIER DATABASE

CONFIRMATION OF CSD VENDOR INFORAMTION		
1	VENDOR NAME	
2	CSD APPROVED NUMBER	**M**_____
3	COMPANY REG NUMBER	
4	COMPANY TAX NUMBER	
5	COMPANY VAT NUMBER	
6	CONTACT PERSON	
7	OFFICE TEL. NUMBER	
8	OFFICE FAX NUMBER	
9	E-MAIL ADDRESS	
10	CELL NUMBER	

I, _____ in my capacity as _____ being the

authorized signatory, hereby declare that the above information is true and correct.

_____ _____

AUTHORISED SIGNATORY DESIGNATION **NAME AND SURNAME**

_____

RESOLUTION DATE: AUTHORISED SIGNATORY APPOINTMENT

_____ _____

SIGNATURE **DATE**

PRO-FORMA FOR COMPANIES AND CLOSE CORPORATIONS:

"By resolution of the board of directors passed on *(date)* _____

Prof./Dr/Mr/Ms _____

has been duly authorized to sign all documents in connection with the Bid Document for Contract Number _____ and any Contract which may arise there from on behalf of _____

(BLOCK CAPTIALS)

SIGNED ON BEHALF OF THE COMPANY_____

IN HIS CAPACITY AS _____

DATE _____

FULL NAMES OF SIGNATORY _____

AS WITNESSES: **1.** _____

2. _____

PRO-FORMA FOR JOINT VENTURES:
Certificate of Authority for Joint Ventures

We, the undersigned, are submitting this Bid Document offer in Joint Venture and hereby authorise Mr/Ms _____, authorised signatory of the company _____, acting in the capacity of lead partner, to sign all documents in connection with the Bid Document offer an any contract resulting from it on our behalf.

NAME OF FIRM	ADDRESS	DULY AUTHORISED SIGNATORY
		Signature: …….. Name: ……. Designation: ……..
		Signature: …….. Name: ……. Designation: ……..
		Signature: …….. Name: ……. Designation: ……..
		Signature: …….. Name: ……. Designation: ……..

N.B.: THE DULY SIGNED AND DATED ORIGINAL OR CERTIFIED COPY OF AUTHORITY OF SIGNATORY ON COMPANY LETTERHEAD SHOULD BE INCLUDED IN THE RETURNABLE DOCUMENTS PACK.

FORM D

FINANCIAL REFERENCES/ BIDDERS'S CREDIT RATING AND DETAILS OF BIDDERS BANKING INFORMATION

Notes to Bidder:

1. The Bidder shall attach to this form a letter from the bank confirming the bank account and details. Failure to provide the required letter with the Bid Document submission shall render the Bidder's offer unresponsive.
2. The Bidder's banking details as they appear below shall be completed.
3. In the event that the Bidder is a joint venture enterprise, details of all the members of the joint venture shall be similarly provided and attached to this form.

BANK NAME:	
ACCOUNT NAME: *(e.g. ABC Civil Construction cc)*	
ACCOUNT TYPE: *(e.g. Savings, Cheque etc)*	
ACCOUNT NO:	
ADDRESS OF BANK:	
CONTACT PERSON:	
TEL. NO. OF BANK / CONTACT:	
How long has this account been in existence:	0-6 months ☐ 7-12 months ☐ 13-24 months ☐ More than 24 months ☐ (Tick which is appropriate)

_____

Signature on behalf of Bidder

N.B.: ORIGINAL LETTER FROM BANK OR BANK STATEMENT (NOT OLDER THAN THREE MONTHS) SHOULD BE INCLUDED IN THE RETURNABLE DOCUMENTS PACK.

FORM E

RECORD OF ADDENDA TO BID DOCUMENTS

We confirm that the following communication received from the Employer before the submission of this BID DOCUMENT offer, amending the BID DOCUMENT documents, have been taken into account in this BID DOCUMENT offer:

	Date	Title of Details

_____

SIGNATURE ON BEHALF OF BIDDER

FORM F

CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatory in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the board of directors.

By resolution of the board of directors passed at a meeting held on _____ 20 _____,

Mr//Ms_____ whose signature

appears below, has been duly authorised to sign the AGREEMENT IN TERMS OF THE

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) on behalf of

---

SIGNED ON BEHALF OF THE COMPANY : _____

IN HIS/HER CAPACITY AS : _____

DATE : _____

SIGNATURE OF SIGNATORY : _____

WITNESS: _____ **WITNESS:** _____

NAME (in capitals): _____ **NAME:** _____

FORM G

OCCUPATIONAL HEALTH AND SAFETY AGREEMENT /PLAN (WHERE APPLICABLE)

FORM H

CERTIFIED COPY OF ID DOCUMENT/S OF OWNERS/MEMBERS/SHAREHOLDERS

FORM I

CURRENT CERTIFICATE OF GOOD STANDING FROM COMPENSATION COMMISSIONER

FORM J

EXPERTISE OF THE KEY PERSONNEL

1. **Personnel / Individual adequacy:** Portfolio of evidence (CV) should be provided. Indicating similar projects / jobs completed or undertaken by the personnel stated below.

2. **Qualifications:** Portfolio of evidence should be provided for the key staff with supporting Qualifications (SAQA, QCTO etc. accredited) and detailed organogram.

3. **Pro-Forma CV**: A pro-forma curriculum vitae shall be filled in full on the below given forms.

NB: Failure to provide information may lead to non-compliance and disqualification.

KEY STAFF EXPERIENCE				
Position on this Contract	**Full Name**	**ID No.**	**Qualifications**	**No. of Relevant Years of Experience**
Site Supervisor				
Health & Safety Officer				
Installation Fitter				
Installation Rigger				

This declaration must be completed as part of the mandatory requirements of this document.

DECLARATION:

I, _____**,** duly authorized to sign this declaration**,** hereby confirm/declare that the information submitted as portfolio of evidence in relation to key staff experience, Curriculum vitae (CV) and qualifications is a true reflection of the submission.

SIGNATURE: _____ **DATE:** _____

PRO-FORMA CURRICULUM VITAE OF KEY PERSONNEL/STAFF

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	SITE SUPERVISOR
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications(Attach Proof of Qualification) :	
Professional Membership (If any):	
Name of Employer (Firm) :	
Current Position :	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	HEALTH & SAFETY OFFICER
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications(Attach Proof of Qualification) :	
Professional Membership:	
Name of Employer (Firm) :	
Current Position :	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	INSTALLATION FITTER
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications (Attach Proof of Qualification) **:**	
Professional Membership (if any):	
Name of Employer (Firm) :	
Current Position :	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	

This form should be completed for each key person listed in the functionality criterion

Responsibility or role on the project (as per list in form k)	INSTALLATION RIGGER
Name:	**Date of Birth:**
Profession:	**Nationality:**
Qualifications (Attach Proof of Qualification) **:**	
Professional Membership (if any):	
Name of Employer (Firm) :	
Current Position :	**Years with firm:**
Employment record: (List of chronological order starting with earliest work experience)	
Experience record pertinent to required service:	

FORM L

INLCUDE THE FOLLOWING DOCUMENTS IN THE SUPPORING DOCUMENTS FILE TO BE SUBMITTED WITH THE ORIGINAL BIDDING DOCUMENT

1. **FOR CLOSED CORPORATIONS**

   CK1 or CK2 as applicable (Founding Statement).

2. **FOR COMPANIES**

   - A copy of the Certificate of Incorporation
   - Certified Copies of the ID's of the Directors and
   - The shareholders' register.

3. **JOINT VENTURES, TRUSTS OR CONSORTIUM**

   - Copy of the Joint Venture Agreement between all the parties,
   - As well as the documents in (1) or (2) and (5) of each Joint Venture member.

   A trust, consortium or joint venture, will be able to claim for points for their specific goals provided that the entity submits a valid signed agreement.

   Bidders must submit concrete proof of the existence of joint ventures and/or consortium arrangements. National Treasury will accept signed agreements as acceptable proof of the existence of a joint venture and/or consortium arrangement.

   The joint venture and/or consortium agreements must clearly set out the roles and responsibilities of the Lead Partner and the joint venture and/or consortium party. The agreement must also clearly identify the Lead Partner, with the power of attorney to bind the other party/parties in respect of matters pertaining to the joint venture and/or consortium arrangement.

4. **FOR PARTNERSHIP**

   - Certified Copies of the ID's of the partners

5. **ONE-PERSON BUSINESS / SOLE TRADER/SOLE PROPRIETOR**

   - Certified Copy of ID

FORM M

BACKGROUND AND WORK EXPERIENCE

Briefly summarize the Company's experience with regard to pump installations in industrial plants/ and/ or municipal water/wastewater treatment plants. Select up to five projects completed in South Africa that are similar in scope and magnitude to this project. For each project completed, attach a Certificate of Completion and/ or Reference Letter.

	EMPLOYER	EMPLOYER'S REPRESENTATIVE (NAME, TEL, E-MAIL)	PROJECT TITLE AND DESCRIPTION OF WORK Inc. CAPACITY OF THE WORKS	VALUE OF WORK (R-Rand)	COMPLETION DATE
PROJECT 1					
PROJECT 2					
PROJECT 3					
PROJECT 4					
PROJECT 5					

ERWAT
EXCELLENCE IN WASTEWATER

PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

C. AGREEMENTS AND CONTRACT DATA

Part C1: Agreements and Contract Data

C1.1 Form of Offer and Acceptance
C1.2 Contract Data
C1.3 Occupational Health and Safety
C1.4 Corporate Governance Breach Clause

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

C1 AGREEMENTS AND CONTRACT DATA

Part C1: Agreements and Contract Data

C1.1 Form of Offer and Acceptance

C1.2 Contract Data

C1.3 Occupational Health and Safety

C1.4 Corporate Governance Breach Clause

C1.1 FORM OF OFFER AND ACCEPTANCE

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter in contract in respect of the following works: ***PROJECT NO: ERW2302/02: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS***

The Bidder, identified in the Offer signature block below, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the Bidder, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Bidder offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED RATES FOR THE GOODS, AS SET OUT IN THE PRICING SCHEDULE/BILL OF QUANTITIES (THE PRICES INCLUSIVE OF VALUE ADDED TAX), IS HEREBY CONFIRMED FOR THE PERIOD OF THE CONTRACT PERIOD INCLUDING THE PROVISIONS FOR THE ANNUAL ESCALATIONS (WHERE APPLICABLE)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Bidder before the end of the period of validity stated in the Tender Data, whereupon the Bidder becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

Signature(s) ....

Name(s) ....

Capacity ....

For the Bidder .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

ACCEPTANCE

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Bidder's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Bidder's Offer shall form an agreement between the Employer and the Bidder upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract are contained in:

- Agreements and Contract Data (which includes this Agreement)
- Pricing Data
- Scope of Work
- Site information

And drawings and documents or parts thereof, which may be incorporated by reference into above stated terms.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Bidder and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative(s) of both parties.

The Bidder shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data at or just after the date this Agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Bidder receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Bidder (now Contractor) within five days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature(s) ....

Name(s) ....

Capacity ....

For the Employer .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.

2. A Bidder's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid becomes the subject of agreements reached during the process of Offer and Acceptance; the outcome of such agreement shall be recorded here.

3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the Tender documents and which it is agreed by the Parties becomes an obligation of the contract, shall also be recorded here.

4. Any change or addition to the tender documents arising from the above agreements and recorded here shall also be incorporated into the final draft of the Contract.

1 Subject .....

Details.....

.....

2 Subject .....

Details.....

.....

3 Subject .....

Details.....

.....

4 Subject .....

Details.....

.....

5 Subject .....

Details.....

.....

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Bidder agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the Offer agreed by the Bidder and the Employer during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the Tender documents and the receipt by the Bidder of a completed signed copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

FOR THE BIDDER:

Signature(s) ....

Name(s) ....

Capacity ....

For the Bidder .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

FOR THE EMPLOYER

Signature(s) ....

Name(s) ....

Capacity ....

For the Employer .....
(Name and address of organisation)

Name & Signature
Of Witness ....
Name Date

C1.2 CONTRACT DATA

GENERAL CONDITIONS OF CONTRACT

This Contract will be based on the "General Conditions of Contract for Construction Works *General Conditions of Contract 2015 (GCC 2015, Third Edition*)

Documents can be ordered from SAICE who can be contacted through their website www.saice.org.za. Physical address: SAICE House, Block 9, Thornhill Office Park, Bekker Street, Midrand, Johannesburg. Telephone number: (011) 805 5947.

It is agreed that the only variations from the General Conditions of Contract 2015 are those set out hereafter under "Special Conditions of Contract".

SPECIAL CONDITIONS OF CONTRACT

These Special Conditions of Contract (SCC) form an integral part of the Contract. The Special Conditions of Contract shall amplify, modify or supersede, as the case may be, the General Conditions of Contract 2015 to the extent specified below, and shall take precedence and shall govern.

The clauses of the Special Conditions hereafter are numbered "SCC" followed in each case by the number of the applicable clause or subclause in the General Conditions of Contract 2015, and the applicable heading, or (where a new special condition that has no relation to the existing clauses is introduced) by a number that follows after the last clause number in the General Conditions, and an appropriate heading.

"The Special Conditions of Contract are supplementary to that of the General Conditions of Contract. In the event of any contradiction between the GCC or any other applicable contractual agreement, the Municipal Financial Management Act and its applicable regulations will take precedence."

The contract will commence on the last signature date of the Service Level Agreement.

If the tender is found to be unauthorised, fruitless and wasteful or irregular as informed through a formal investigation, internal and or external audit outcome, the Auditor General, Council, ERWAT Board of Directors or National Treasury, ERWAT reserves the right to cancel the tender with immediate effect and the bidder will have no claim to his affect. The final terms of payment (where applicable) will be negotiated with the bidder at the time for final close out of the contract.

AMENDMENTS TO THE GENERAL CONDITIONS OF CONTRACT

DATA PROVIDED BY THE EMPLOYER

Clause	Data
	Definitions The definitions contained in Clause 1.1 are hereby amended and/or supplemented as follows:
SCC 1.1.1.13	The Defects Liability Period is **12** months from the date of the Certificate of Completion. The Defects Liability Period is **12** months from the date of the Certificate of Completion per installation
SCC 1.1.1.14	The Works shall be completed within **36** months from the commencement date on an "as and when required basis". The Purchase Orders of the Works shall be placed within **36** months from the commencement date on an "as and when required basis".
SCC 1.1.1.15 **1.2.1.2**	The Name of the Employer is **ERWAT** The address of the Employer is: The Managing Director Hartebeestfontein Office Park R25 (Bapsfontein/Bronkhorstspruit) Kempton Park Telephone: 011 929 7000
SCC 3.2.3	**Add the following:** Approval of the Employer is required for: i). Cessions – issuing of cessions by the Contractor is expressly prohibited except if and when prior written approval of the Employer under the signature of the Accounting Officer for the issue of the cession has been requested and obtained ii). Use of contingencies – for all items for which rates have not been approved in terms the contract. iii). Extension of Time – extension of time can only be granted by the Employer.
SCC 4.1.2	**Add the following:** **"**When completed, the parts of the works designed by the Contractor, to the extent specified in the Contract, shall be fit for the purposes for which the Works are intended"

Clause	Data
SCC 4.9.1	**Add the following:** "All equipment on site shall be in a good working order, and is to be in such a condition that it can achieve production rates which are typical of the industry standards. Should any equipment, in the opinion of the Employer, be substandard or breaks down frequently to such an extent that it affects the progress on the project, the Employer may instruct the Contractor to replace such equipment.''
SCC 5.3.1	**Add the following to 5.3.1:** The documentation required before Commencement of the Works are: • Health & Safety Plan (Refer to Cl. 4.3 of GCC 3rd Ed 2015) • Initial Programme (Refer to Cl. 5.6 of GCC 3rd Ed 2015) • Security (Deed of Guarantee) (refer to Cl. 6.2 of GCC 3rd Ed 2015) • Insurances (Refer to Cl. 8.6 of GCC 3rd Ed 2015)
SCC 5.3.3	**Add the following:** The time to the documentation required before Commencement of the Works execution is **28** days
SCC 5.4.1	**Add the following:** The Commencement Date shall be the date the contractor is given possession of site.
SCC 5.8.1	**Add the following:** The special non-working days are the official builder's holiday plus all statutory public holidays.
SCC 5.12	**Add the following:** A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Employer, all progress on an item or items of work on the critical path of the working programme of the contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of "n" working days caused by normal rainy weather, for which he will not receive any extension of time, where "n" equals 5 days. Extension of time during working days will be granted to the degree to which actual delays, as defined above, exceed the number of "n" workings days.

Clause	Data
SCC 5.12.2.1	**Add the following:** Extensions of time in respect of clause 5.12 in respect of abnormal rainfall shall be calculated using the following formula for each calendar month or part thereof: $V = (Nw - Nn) + \frac{(Rw - Rn)}{X}$ Where: V = Extension of time in calendar days in respect of the calendar month under consideration. Nw = Actual number of days during the calendar month on which a rainfall of 10 mm or more has been recorded. Nn = Average number of days in the relevant calendar month, as derived from existing rainfall records, on which a rainfall of 20mm or more has been recorded for the calendar month. Rw = Actual average rainfall in mm recorded for the calendar month under consideration. Rn = Average rainfall in mm for the calendar month as derived from existing rainfall records as stated in the Site Information. For purposes of the Contract Nn, Rn, X and Y shall have those values assigned to them in the South African Weather Service's rainfall records of the nearest station to the site. If V is negative and its absolute value exceeds Nn, then V shall be taken as equal to minus Nn. The total extension of time shall be the algebraic sum of all monthly totals for the period under consideration, but if the total is negative the time for completion shall not be reduced due to subnormal rainfall. Extensions of time for part of a month shall be calculated using pro rata values of Nn and Rn. This formula does not take account flood damage which could cause further or concurrent delays and will be treated separately as far as extension of time is concerned. The factor (Nw – Nn) shall be considered to represent a fair allowance for variations from the average in the number of days during which rainfall exceeds 10 mm. The factor (Rw-Rn) shall be considered to represent a fair allowance for variations from the average in the number of days during which the rainfall did not exceed 10 mm but wet conditions prevented or disrupted work. For the purpose of applying the formula, accurate rain gauging shall be taken at a suitable point on the Site and the Contractor shall at his own expense, take all necessary precautions to ensure that rain gauges cannot be interfered with by unauthorized persons.

Clause	Data
SCC 5.13.1	**Add the following:** The penalty for failing to complete the works is shall be calculated as follows; Purchase Order value multiply 0.04% per day
SCC 6.9.1	All materials shall comply with the requirements of the South African Bureau of Standards, and shall bear the official standardization mark. Where SABS standard does not exist for a certain material, or a material does not bear the official standardization mark, the Client's Representatives approval of such material must be gained before use thereof.
SCC 6.10.1.5	**Add the following:** The percentage advance on materials not yet built into the Permanent Works but received on site is **80** %.
SCC 7.2.1	**Add the following:** All materials shall comply with the requirements of the South African Bureau of Standards, and shall bear the official standardization mark. Where SABS/SANS/ISO standard does not exist for a certain material, or a material does not bear the official standardization mark, the Employers approval of such material must be gained before use thereof.
SCC 8.6.1.1.2	**Add the following:** The value of the materials supplied by the Employer to be included in the insurance sum is nil.

PART 2: DATA PROVIDED BY THE CONTRACTOR

Sub-Clause	Data
1.1.17	The Contractor is: Name: ..... The Address of the Contractor is: Address (physical): ....

	Address (postal): .... Telephone: ..... Facsimile: ..... E-mail: .....
1.1.22	Contractors Representative Name: ..... Telephone: ..... Facsimile: ..... E-mail: .....

C1.4 OCCUPATIONAL HEALTH AND SAFETY

AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT IS made at .....

on the ..... day of ..... in the year ……

Between EKURHULENI WATER CARE COMPANY (ERWAT) (hereinafter called "the Employer") of the one

part, herein represented by .....

In his capacity as .....

and delegate of the Employer in terms of the Employer's standard powers of delegation pursuant to the provisions of Act No 7 of 1998,

and .....

(hereinafter called "the Mandatory") of the other part, herein represented by .....

.....

in his capacity as .....

and being duly authorized by virtue of a resolution appended hereto as Annexure A;

WHEREAS the Employer requires certain works be constructed, viz REPLACEMENT OF SELF-PRIMING AND HORIZONTAL END SUCTION PUMPS AT VARIOUS ERWAT WATER CARE WORKS: MANUFACTURE, SUPPLY, DELIVERY, INSTALL AND COMMISSIONS and has accepted a Bid by the Mandatory for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatory have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatory with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

NOW THEREFORE THIS AGREEMENT WITNESSED AS FOLLOWS:

1 The Mandatory shall execute the work in accordance with the Contract Documents pertaining to this Contract.

2 This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or engineer requiring him to commence the execution of the Works, to either –

(a) the date of the Final Approval Certificate issued in terms of Clause 5.16 of the General Conditions of Contract 2010 (hereinafter referred to as "the GCC"), as contained in the Contract Documents pertaining to this Contract, or

(b) The date of termination of the Contract in terms of Clauses 9.1, 9.2, 9.3 of the GCC.

3 The Mandatory declares himself to be conversant with the following:

(a) All the requirements, regulations and standards of the Occupational Health and Safety Act (Act 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following Sections of the Act:

(i) Section 8 : General duties of Employers to their employees

(ii) Section 9 : General duties of Employers and self-employed persons to persons other than employees

(iii) Section 37: Acts or omissions by employees or mandatories

(iv) Sub-section 37(2) relating to the purpose and meaning of this Agreement

(b) The procedures and safety rules of the Employer as pertaining to the Mandatory and to all his subcontractors.

4 In addition to the requirements of Clause 8.4 of the GCC (as amended by Special Condition of Contract) and all relevant requirements of the above-mentioned Volume, the Mandatory agrees to execute all the Works forming part of this Contract and to operate and utilize all machinery, Plant and equipment in accordance with the Act.

5 The Mandatory is responsible for the compliance with the Act; the safety procedures and rules of the employer by all his subcontractors, whether or not selected and/or approved by the Employer.

6. The Mandatory warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 (Act No 130 of 1993), which cover, shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

7. The Mandatory undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:

a) The Mandatory shall assume the responsibility in terms of Section 16.1 of the Act. The Mandatory shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatory obtains such approval and delegates any duty in terms of section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.

b) All incidents referred to in the Act shall be reported by the Mandatory to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.

c) The Employer hereby obtains an interest in the issue of any formal enquiry conducted in terms of section 32 of the Act into any incident involving the Mandatory and/or his employees and/or his subcontractors.

In witness hereof the parties are to set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER : .....

Witness	.....	Witness	.....
(Name) (Print)	.....	(Name) (Print)	.....

SIGNED FOR AND ON BEHALF OF THE MANDATORY.....:

Witness	.....	Witness	.....
(Name) (Print)	.....	(Name) (Print)	.....

ANNEXURE A

CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatory in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the board of directors.

By resolution of the board of directors passed at a meeting held on ..... 20.....,

Mr//Ms ..... whose signature

appears below, has been duly authorised to sign the AGREEMENT IN TERMS OF THE

OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT 85 OF 1993) on behalf of .....

.....

SIGNED ON BEHALF OF THE COMPANY : .....

IN HIS/HER CAPACITY AS : .....

DATE : .....

SIGNATURE OF SIGNATORY : .....

WITNESS : ..... WITNESS : .....

NAME (in capitals): ..... NAME..... :

C1.5 CORPORATE GOVERNANCE BREACH CLAUSE

1. Ekurhuleni Water Care Company ("ERWAT") requires [insert name of company] ("the Company") to comply, mutatis mutandis with the Code contained in the King III Report and Code of Good Corporate Governance (below "the Code") for the term of this Agreement and any extension thereof.

2. The Company irrevocably undertakes and agrees that it will, mutatis mutandis, comply with the Code for the term of this Agreement and any extensions thereof.

3. The Company acknowledges and agrees that:

   3.1 It is essential that the Company complies with the Code, in order to discharge all of its obligations under and in terms of the Agreement in a proper, efficient and professional manner, and

   3.2 ERWAT will be prejudiced and may suffer damages in the event of the Company failing to comply with the Code.

4. The Company shall be required, within seven (7) days of the end of each calendar month during the term of this Agreement (and any extensions thereof), to furnish ERWAT with a written certificate, signed by the directors of the Company [alternatively members of the Close Corporation], certifying that the Company has complied with the provisions of the Code during the preceding months.

5. ERWAT shall have the right, without assigning any reason therefore and at any time, to appoint either the Institute of Directors of South Africa or a firm of chartered accountants or attorneys, to conduct an audit of the business and affairs of the Company in order to ascertain whether the Company is indeed complying with the terms of the Code.

   To this end, the Company irrevocably undertakes and agrees to co-operate fully with the party conducting such investigation for and on behalf of ERWAT and to make available to such party all such documentation and all such information as the investigation party may require to fully discharge its obligations under and in terms hereof and to report fully to ERWAT.

   In the event of it being found that the Company is not complying with the Code, then ERWAT shall be entitled to (a) regard this as a breach of the agreement and (b) recover the costs of the investigation, on an attorney and client basis, from the Company. In the event of it being found that the Company is, in fact, discharging its obligations under and in terms of the Code, then ERWAT shall bear the costs incurred in such investigation. In either of the aforegoing events, the Company shall be entitled to receive a copy of the written report once same has been concluded by the investigating party.

6. In the event of the Code being replaced with another Code (or similar document), then such replacement document shall replace the Code and a reference to the Code shall be deemed to be a reference to such replacement document. The reference to the Code shall be deemed to include any statutory codification of directors' obligations and duties which may be enacted in the Republic of South Africa at any time in the future.

7. In entering into this Agreement, the Company represents and warrants to ERWAT that it is familiar with the Code, that it fully understands and appreciates the rights, obligations and recommendations therein contained and agrees to be bound thereby as herein recorded.

Initial: _____

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

C2 PRICING DATA

C2.1 Pricing Instructions

C2.2 Bill of Quantities

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY, DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

C2.1 PRICING INSTRUCTIONS

1 The applicable Conditions of Contract, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.

2 The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

Although the Bidder is at liberty to insert a rate of his own choosing for each item in the Bill, he should note the fact that the Contractor is entitled, under various circumstances, to payment for additional work carried out and that the Engineer is obliged to base his assessment of the rates to be paid for such additional work on the rates the Contractor inserted in the Bill.

3 Descriptions in the Bill of Quantities are abbreviated and may differ from those in the Standardized and Project Specifications. No consideration will be given to any claim by the Contractor submitted on such a basis.

4 Unless stated to the contrary, items are measured net in accordance with the Drawings without any allowance having been made for waste.

5 The amounts and rates to be inserted in the Bill of Quantities shall be the full inclusive amounts to the Employer for the work described under the several items. Such amounts shall cover all the costs and expenses that may be required in and for the construction of the work described, and shall cover the costs of all general risks, profits, taxes (but excluding value-added tax), liabilities and obligations set forth or implied in the documents on which the Tender is based.

6 The quantities set out in the schedule of quantities are only approximate quantities. The quantities of work finally accepted and certified for payment, and not the quantities given in the schedule of quantities, will be used to determine payments to the contractor.

7 An amount or rate shall be entered against each item in the Bill of Quantities, whether or not quantities are stated. An item against which no amount or rate is entered will be considered to be covered by the other amounts or rates in the Bill.

The Bidder shall also fill in a rate against the items where the words "rate only" appear in the amount column. Although no work is foreseen under these items and no quantities are consequently given in the quantity column, the tendered rates shall apply should work under these items actually be required.

Should the Bidder group a number of items together and Tender one sum for such group of items, the single tendered sum shall apply to that group of items and not to each individual item, or should he indicate against any item that full compensation for such item has been included in another item, the rate for the item included in another item shall be deemed to be nil.

The tendered rates, prices and sums shall, subject only to the provisions of the applicable Conditions of Contract, remain valid irrespective of any change in the quantities during the execution of the Contract.

8 The quantities of work as measured and accepted and certified for payment in accordance with the applicable Conditions of Contract, and not the quantities stated in the Bill of Quantities, will be used to determine payments to the Contractor. The validity of the Contract shall in no way be affected by differences between the quantities in the Bill of Quantities and the quantities certified for payment.

Ordering of materials is not to be based on the Bill of Quantities, but only on information issued for construction purposes.

9 For the purposes of this Bill of Quantities, the following words shall have the meanings hereby assigned to them:

Unit	:	The unit of measurement for each item of work as defined in the Standardized, Project or Particular Specifications
Quantity	:	The number of units of work for each item
Rate	:	The payment per unit of work at which the Bidder Tenders to do the work
Amount	:	The quantity of an item multiplied by the tendered rate of the (same) item
Sum	:	An amount tendered for an item, the extent of which is described in the Bill of Quantities, the Specifications or elsewhere, but of which the quantity of work is not measured in units

10 The units of measurement indicated in the Bill of Quantities are metric units. The following abbreviations may appear in the Bill of Quantities:

mm	=	millimetre
m	=	metre
km	=	kilometre
km-pass	=	kilometre-pass
m^2	=	square metre
m^2-pass	=	square metre-pass
ha	=	hectare
m^3	=	cubic metre

m^3-km	=	cubic metre-kilometre
kW	=	kilowatt
kN	=	kilo Newton
kg	=	kilogram
t	=	ton (1 000 kg)
%	=	per cent
MN	=	mega Newton
MN-m	=	mega Newton-metre
PC Sum	=	Prime Cost Sum
Prov Sum	=	Provisional Sum
GSM	=	Global System for Mobile Communication

11 Payment for items which are designated to be constructed labour-intensively (either in this schedule or in the Scope of Works) will not be made unless they are constructed using labour-intensive methods. Any unauthorised use of plant to carry out work which was to be done labour-intensively will not be condoned and any works so constructed will not be certified for payment.

12. Rates tendered for BOQ items are deemed to include for all required tools, equipment, plant, materials, labour and supervision necessary to complete that bill item. Off cuts and wastage are to be included in the tendered rate.

13. Mistakes made by the Bidder in completion of the BOQ shall not be erased or covered with correcting fluid. A line shall be drawn through the incorrect entry and the correct entry shall be written above the deletion and initialled by the Bidder. Failure to observe this Condition may lead to the Tender being disqualified.

14. By nature, a Design and Build Contract BOQ will contain a significant amount of sums. In order to facilitate payment during the Design Build period, it is in the Contractors interest to append a detailed Bill of Quantity for each sum detailing what the sum is made up of.

15. Bidders are required to price for the items requested and include all direct and indirect fees (e.g. Transportation and Packaging).

16. Please note that all quantities stated in the Schedule of rates of this bid document are estimated quantities (indicative only and not guaranteed).

17. Due to the nature of this commodity, the bid document will only reflect a quantity of 1 (One) next to each line item. This quantity of 1 (One) is not an indication that ERWAT only intends to buy one of each product or make use of a service once.

18. However, the quantity of 1 (One) is not an indication that ERWAT is under any obligation to procure all of the indicated products or services stated in the Schedule of rates during the duration of the contract.

19. Invoicing and payment will be done on actual measured works/services rendered, singed off by the bidder and ERWAT's representative.

20. This is a rates based tender and therefore no final totals (only indicative that must not be construed as the contract value) will be applicable in the pricing schedule and orders will only be generated on an as and when required basis according to the rates.

21. The successful bidder will be required to submit a quote for the works required prior to being issued an official order and will be limited to the rates as set out herein.

22. Bidders are required to price for all direct and indirect cost relating to the execution of the contract.

23. Evaluation for price scoring will be done by calculating the line items in the table below to an indicative sum to determine the highest scoring bidder as provided for in the PPPFA Regulation 2022.

24. Bidders should note that the quantity stipulated in the table below is indicative and ERWAT reserves the right to increase the quantity as the need arises and does not constitute that an order will be given for such Unit Standard.

25. The items listed in this Bill of Quantities are linked to the scope of works and datasheet, i.e. Type 1 Submersible Pumps datasheet shall be priced under Type 1 Submersible Pumps as stated in the BOQ, other types to also follow this pattern.

ERWAT
EXCELLENCE IN WATER CARE

PROJECT NO: ERW2302/02

REPLACEMENT OF SELF-PRIMING AND HORIZONTAL END SUCTION PUMPS AT VARIOUS ERWAT WATER CARE WORKS: MANUFACTURE, SUPPLY, DELIVERY, INSTALL AND COMMISSION

C2.2 BILL OF QUANTITIES

BILL OF QUANTITIES				
PRELIMINARY AND GENERAL				
ITEM	**DESCRIPTION**	**UNIT**	**QTY**	**RATE**
Occupational Health and Safety Requirements				
1	General Health & Safety Obligations	Sum		
2	Development of the Occupational Health and Safety File (Including Updating and Maintaining)	each	1	
3	Health and Safety Officer	hr	1	
4	Safety Signage: Information Boards and Signs including danger tapes as well as barricades (During Execution)	Sum		
Planning, Execution and Quality Requirements				
5	Factory Testing of all equipment covered by this contract including quality control.	each	1	
6	Programme of Works, Cash Flow Projections, Bi-Weekly Progress Reports for the duration of the Contract and 4x Close-Out Report with O & M Manual, SOPs (Soft and Hard Copies) including Drawings (in both .pdf and .dwg formats)	each	1	
7	Commissioning and Hand Over Activities (including Commissioning Report)	each	1	
8	40 Hours Training for Pumps: Design, Operations, and Maintenance for Plant Personnel recognised within the SAQA National Qualification Framework	each	1	
Equipment Hire (Wet Rate)				
9	LDV	Day	1	
10	Truck, with 4 Ton Capacity Crane	Day	1	
11	$6m^3$ Tipper Truck	Day	1	
12	$10m^3$ Tipper Truck	Day	1	
13	Bobcat	Day	1	
14	Standard Size TLB	Day	1	
15	Excavator (0.1kW per tined width of bucket)	Day	1	

16	Compactor (Vibrating Plate)	Day	1	
17	4" Trash Pump	Day	1	
19	6" Mobile Diesel Pump & Auxiliaries (Including Layflats)	Day	1	
20	Combination Super Sucker Truck (with High Pressure Jetting Capabilities)	Day	1	
21	Lifting Equipment (8 Ton Crane) & Accessories	Day	1	
22	Lifting Equipment (20 Ton Crane) & Accessories	Day	1	
23	Lifting Equipment (25 Ton Crane) & Accessories	Day	1	
24	Lifting Equipment (35 Ton Crane) & Accessories	Day	1	
25	Lifting Equipment (55 Ton Crane) & Accessories	Day	1	
26	Lifting Equipment (90 Ton Crane) & Accessories	Day	1	
27	Lifting Equipment (110 Ton Crane) & Accessories	Day	1	
28	Lifting Equipment (220 Ton Crane) & Accessories	Day	1	
29	Lifting Equipment (275 Ton Crane) & Accessories	Day	1	
30	18m Working Height Cherry Picker (230kg SWL)	Day	1	
31	28m Working Height Cherry Picker (230kg SWL)	Day	1	
32	43m Working Height Cherry Picker (272kg SWL)	Day	1	
33	Pipe Plug DN80 (PN16)	Day	1	
34	Pipe Plug DN100 (PN16)	Day	1	
35	Pipe Plug DN150 (PN16)	Day	1	
36	Pipe Plug DN200 (PN16)	Day	1	
37	Pipe Plug DN250 (PN16)	Day	1	
38	Pipe Plug DN300 (PN16)	Day	1	

39	Pipe Plug DN350 (PN16)	Day	1	
40	Pipe Plug DN400(PN16)	Day	1	
41	Pipe Plug DN450 (PN16)	Day	1	
42	Pipe Plug DN500 (PN16)	Day	1	
43	Artisan Fitter's Toolbox	Day	1	
44	Electrician's Toolbox	Day	1	
45	Standard Welding Equipment (Complete Set)	Day	1	
46	Standard Cutting Torch (Complete Set)	Day	1	
47	Standard Grinder	Day	1	
Installation Personnel				
48	Site Supervisor	hr	1	
49	Installation Fitter	hr	1	
50	Installation Electrician	hr	1	
51	Installation Rigger	hr	1	
52	Draughtsperson	hr	1	
53	Semi-Skilled Worker (Trade Aide Assistant)	hr	1	
54	General Worker	hr	1	

1. CATEGORY A: SELF-PRIMING PUMPS

CATEGORY A: SELF-PRIMING PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Type 1: Self-Priming Pumps			
1	2 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys, including a 304 Pump/Mounting Stand	each	1	
2	3 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys including a 304 Pump/Mounting Stand	each	1	
3	4 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys including a 304 Pump/Mounting Stand	each	1	
4	6 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys including a 304 Pump/Mounting Stand	each	1	
5	8 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys including a 304 Pump/Mounting Stand	each	1	
6	10 Inch Complete Self-Priming Pump, with V-Belt, Drive End and Non-Drive End Pulleys, Taper Locks and Matching Locking Keys including a 304 Pump/Mounting Stand	each	1	

2. CATEGORY B: SUBMERSIBLE PUMPS (Wet-Well Installation)

CATEGORY B: SUBMERSIBLE PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Type 1: Submersible Pumps			
1	1.1 kW, 220V Electric Motor Pump with Float Switch and Electrical Cord with a 3 – Pin Plug	each	1	
2	1.1 kW, 400V Electric Motor Pump with Float Switch and 20m Electrical Cable	each	1	
3	2 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
4	2,4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
5	3.1 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
6	4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
7	4.2 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
8	4.7 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
9	5.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
10	5.9 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
11	7.4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
12	9 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
13	13.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
14	15 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
15	22 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	

16	37 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
17	45 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
18	47 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
19	55 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
20	90 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
21	105 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
	Type 2: Submersible Pumps			
22	1.8 kW, 400V Electric Motor Pump with Float Switch and 20m Electrical Cable	each	1	
23	2.6 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
24	3 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
25	3.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
26	3.6 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
27	4.8 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
28	5.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
29	7.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
30	11 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
31	15 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
32	18.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
33	22 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
34	30 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
35	37 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
36	50 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	

37	60 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
38	70 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
39	90 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
40	110 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	

3. CATEGORY C: IMMERSIBLE PUMPS (Dry Installation)

CATEGORY B: IMMERSIBLE PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Type 1: Immersible Pumps			
1	1.1 kW, 400V Electric Motor Pump with Float Switch and 20m Electrical Cable	each	1	
2	2 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
3	2,4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
4	3.1 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
5	4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
6	4.2 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
7	4.7 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
8	5.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
9	5.9 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
10	7.4 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
11	9 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
12	13.5 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
13	15 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
14	22 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
15	37 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	

16	45 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
17	47 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
18	55 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
19	90 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	
20	105 kW, 400V Electric Motor Pump with 20m Electrical Cable	each	1	

4. CATEGORY D: PROGRESSIVE CAVITY PUMPS

CATEGORY D: PROGRESSIVE CAVITY PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Progressive Cavity Pumps (Differential Pressure 4 BAR)			
1	Differential Pressure 4 BAR and Capacity of 0-37 m³/h	each	1	
2	Differential Pressure 4 BAR and Capacity of 38-57 m³/h	each	1	
3	Differential Pressure 4 BAR and Capacity of 58-79 m³/h	each	1	
4	Differential Pressure 4 BAR and Capacity of 80- 97 m³/h	each	1	
5	Differential Pressure 4 BAR and Capacity of 98 – 165 m³/h	each	1	
6	Differential Pressure 4 BAR and Capacity of 166-225 m³/h	each	1	
7	Differential Pressure 4 BAR and Capacity of 226- 440 m³/h	each	1	
	Progressive Cavity Pumps (Differential Pressure 6 BAR)			
8	Differential Pressure 6 BAR and Capacity of 0-4 m³/h	each	1	
9	Differential Pressure 6 BAR and Capacity of 5-6 m³/h	each	1	
10	Differential Pressure 6 BAR and Capacity of 7-11 m³/h	each	1	
11	Differential Pressure 6 BAR and Capacity of 12-15 m³/h	each	1	
12	Differential Pressure 6 BAR and Capacity of 16-26 m³/h	each	1	
13	Differential Pressure 6 BAR and Capacity of 27-36 m³/h	each	1	

14	Differential Pressure 6 BAR and Capacity of 37-50 m³/h	each	1	
15	Differential Pressure 6 BAR and Capacity of 51-58 m³/h	each	1	
16	Differential Pressure 6 BAR and Capacity of 59-72 m³/h	each	1	
17	Differential Pressure 6 BAR and Capacity of 73-94 m³/h	each	1	
18	Differential Pressure 6 BAR and Capacity of 95-140 m³/h	each	1	
19	Differential Pressure 6 BAR and Capacity of 141-210 m³/h	each	1	
20	Differential Pressure 6 BAR and Capacity of 211-290 m³/h	each	1	
	Progressive Cavity Pumps (Differential Pressure 12 BAR)			
21	Differential Pressure 12 BAR and Capacity of 0-2 m³/h	each	1	
22	Differential Pressure 12 BAR and Capacity of 3-4 m³/h	each	1	
23	Differential Pressure 12 BAR and Capacity of 5-6 m³/h	each	1	
24	Differential Pressure 12 BAR and Capacity of 7-12 m³/h	each	1	
25	Differential Pressure 12 BAR and Capacity of 12-15 m³/h	each	1	
26	Differential Pressure 12 BAR and Capacity of 16-26 m³/h	each	1	
27	Differential Pressure 12 BAR and Capacity of 27-36 m³/h	each	1	
28	Differential Pressure 12 BAR and Capacity of 37-50 m³/h	each	1	
29	Differential Pressure 12 BAR and Capacity of 51-58 m³/h	each	1	
30	Differential Pressure 12 BAR and Capacity of 59-72 m³/h	each	1	
31	Differential Pressure 12 BAR and Capacity of 73- 94 m³/h	each	1	
32	Differential Pressure 12 BAR and Capacity of 95-140 m³/h	each	1	
33	Differential Pressure 12 BAR and Capacity of 141-210 m³/h	each	1	

	Progressive Cavity Pumps (Differential Pressure 24 BAR)			
34	Differential Pressure 24 BAR and Capacity of 0-2 m^3/h	each	1	
35	Differential Pressure 24 BAR and Capacity of 3-4 m^3/h	each	1	
36	Differential Pressure 24 BAR and Capacity of 5-6 m^3/h	each	1	
37	Differential Pressure 24 BAR and Capacity of 7-11 m^3/h	each	1	
38	Differential Pressure 24 BAR and Capacity of 12-15 m^3/h	each	1	
39	Differential Pressure 24 BAR and Capacity of 16-26 m^3/h	each	1	
40	Differential Pressure 24 BAR and Capacity of 27-36 m^3/h	each	1	
41	Differential Pressure 24 BAR and Capacity of 37-51 m^3/h	each	1	
42	Differential Pressure 24 BAR and Capacity of 52-60 m^3/h	each	1	

5. CATEGORY E: PROPELLER PUMPS (AXIAL FLOW TYPE)

CATEGORY E: PROPELLER PUMPS (AXIAL FLOW TYPE)				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Geared Motor-Driven Propeller Pump			
1	16 Inch Propeller Pump	each	1	
2	24 Inch Propeller Pump	each	1	
3	36 Inch Propeller Pump	each	1	
	Submersible Propeller Pump			
4	1.5 Kw Propeller Pump	each	1	
5	2.5 kW Propeller Pump	each	1	
6	3.7 kW Propeller Pump	each	1	
7	5 kW Propeller Pump	each	1	
8	5.5 kW Propeller Pump	each	1	
9	7.5 kW Propeller Pump	each	1	
10	10 kW Propeller Pump	each	1	
11	13 kW Propeller Pump	each	1	
12	18.5 kW Propeller Pump	each	1	
13	25 kW Propeller Pump	each	1	

6. CATEGORY F: END SUCTION PUMPS

CATEGORY F: END SUCTION PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Bearing Frame Pumps			
1	100mm Suction, 80mm Discharge PN16, Bearing Frame Pump	each	1	
2	100mm Suction, 100mm Discharge PN16, Bearing Frame Pump	each	1	
3	150mm Suction, 150mm Discharge PN16, Bearing Frame Pump	each	1	
4	150mm Suction, 125mm Discharge PN16, Bearing Frame Pump	each	1	
5	200mm Suction, 200mm Discharge PN10, Bearing Frame Pump	each	1	
6	250mm Suction, 250mm Discharge PN10, Bearing Frame Pump	each	1	
7	300mm Suction, 300mm Discharge PN10, Bearing Frame Pump	each	1	
8	400mm Suction, 400mm Discharge PN10, Bearing Frame Pump	each	1	
	Dry-Installed Volute Casing Pumps			
9	65mm Suction, 50mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
10	80mm Suction, 50mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
11	80mm Suction, 65mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
12	100mm Suction, 80mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
13	125mm Suction, 80mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
14	125mm Suction, 100mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	

15	150mm Suction, 125mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
16	150mm Suction, 100mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
17	150mm Suction, 150mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
18	200mm Suction, 200mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
19	250mm Suction, 250mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
20	300mm Suction, 300mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
21	350mm Suction, 350mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
22	400mm Suction, 350mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
23	400mm Suction, 400mm Discharge PN10, Dry-Installed Volute Casing Pump	each	1	
	Bare – Shaft Pumps			
24	65mm Suction, 50mm Discharge PN16, Bare – Shaft Pump	each	1	
25	80mm Suction, 65mm Discharge PN16, Bare – Shaft Pump	each	1	
26	100mm Suction, 80mm Discharge PN16, Bare – Shaft Pump	each	1	
27	125mm Suction, 100mm Discharge PN16, Bare – Shaft Pump	each	1	
28	150mm Suction, 125mm Discharge PN16, Bare – Shaft Pump	each	1	
29	200mm Suction, 150mm Discharge PN16, Bare – Shaft Pump	each	1	
30	250mm Suction, 200mm Discharge PN16, Bare – Shaft Pump	each	1	
31	300mm Suction, 250mm Discharge PN16, Bare – Shaft Pump	each	1	

7. CATEGORY G: SUBMERSIBLE MIXERS

CATEGORY G: SUBMERSIBLE MIXERS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
	Type 1: Submersible Mixers			
1	1.5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
2	2.5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
3	3.7 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
4	5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
5	5.5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
6	7.5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
7	10 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
8	13 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
9	18.5 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	
10	25 kW, 400V Electric Motor Submersible Mixer with 20m Electrical Cable	each	1	

8. CATEGORY H: MOBILE DIESEL PUMPS

CATEGORY H: MOBILE DIESEL PUMPS				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY			
	Type 1: Mobile Diesel Pumps			
1	Complete Mobile Diesel (6" Self-Priming Pump, a 4 Cylinder 54 kW Engine with an integrated 160L Fuel Tank) with all auxiliaries including a 9kg fire extinguisher	each	1	
2	Highway Trailer Unit (Single Axle with Brake) with 15" Wheels and Rims with 2x LED Spotlights for night work visibility, and orange Light Bar for night vision and warning, Centre Lifting Beam, Spare Wheel with a Lifting Yoke.	each	1	
3	Trailer Roadworthy Tests, Licensing and Registration Plates	each	1	
4	150mm Female Perrot Coupling Tail	each	1	
5	150mm Male Perrot Coupling Tail	each	1	
6	150mm HD Suction Hose (10m)	each	1	
7	150mm Discharge Layflat Hose (100m)	each	1	
8	150mm HD Hose Clamp	each	1	
9	150mm HD Hose Clamp Bolt Type	each	1	
	Type 2: Mobile Diesel Pumps			
10	Complete Mobile Diesel (Centrifugal Impeller Pump, a 4 Cylinder 55.4 kW Engine with an integrated 400L Fuel Tank) with all auxiliaries including a 9kg fire extinguisher	each	1	
11	Trailer Unit (Double Axle with Brake) with 15" Wheels and Rims with 2x LED Spotlights for night work visibility, and orange Light Bar for night vision and	each	1	

	warning, Centre Lifting Beam, Spare Wheel with a Lifting Yoke.			
12	Trailer Roadworthy Tests, Licensing and Registration Plates	each	1	
13	(150mm Discharge & 200mm Suction) Female Perrot Coupling Tails	each	1	
14	(150mm Discharge & 200mm Suction) Male Perrot Coupling Tails	each	1	
15	200mm HD Suction Hose (10m)	each	1	
16	150mm Discharge Layflat Hose (100m)	each	1	
17	200mm HD Hose Clamp	each	1	
18	200mm HD Hose Clamp Bolt Type	each	1	
	Type 3: Mobile Diesel Pumps			
19	Complete Mobile Diesel (6" Dri-Prime Pump, a 4 Cylinder 54.7 kW Engine with an integrated 330L Fuel Tank) with all auxiliaries including a 9kg fire extinguisher	each	1	
20	Highway Trailer Unit (Double Axle with Brake) with 15" Wheels and Rims with 2x LED Spotlights for night work visibility, and orange Light Bar for night vision and warning, Centre Lifting Beam, Spare Wheel with a Lifting Yoke.	each	1	
21	Trailer Roadworthy Tests, Licensing and Registration Plates	each	1	
22	150mm Female Perrot Coupling Tail	each	1	
23	150mm Male Perrot Coupling Tail	each	1	
24	150mm Green HD Suction Hose (10m)	each	1	
25	150mm Discharge Layflat Hose (100m)	each	1	
26	150mm HD Hose Clamp	each	1	
27	150mm HD Hose Clamp Bolt Type	each	1	

9. CATEGORY I: MECHANICAL AUXILIARIES

CATEGORY I (Part 1): PIPES and VALVES					
ITEM	**DESCRIPTION**	**UoM**	**QTY**	**RATE (VAT Excl.)**	
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.				
	Non-Rising Spindle Wedge Gate Valves			**PN10**	**PN16**
1	50mm Diameter	each	1		
2	80mm Diameter	each	1		
3	100mm Diameter	each	1		
4	150mm Diameter	each	1		
5	200mm Diameter	each	1		
6	250mm Diameter	each	1		
7	300mmdiameter	each	1		
8	350mm Diameter	each	1		
9	400mm Diameter	each	1		
10	500mm Diameter	each	1		
11	600mm Diameter	each	1		
	Knife Gate Valves			**PN10**	**PN16**
12	50mm Diameter	each	1		
13	80mm Diameter	each	1		

14	100mm Diameter	each	1		
15	150mm Diameter	each	1		
16	200mm Diameter	each	1		
17	250mm Diameter	each	1		
18	300mmdiameter	each	1		
19	350mm Diameter	each	1		
20	400mm Diameter	each	1		
21	500mm Diameter	each	1		
22	600mm Diameter	each	1		
	Ball Type Non-Return Valves			**PN10**	**PN16**
23	50mm Diameter	each	1		
24	80mm Diameter	each	1		
25	100mm Diameter	each	1		
26	150mm Diameter	each	1		
27	200mm Diameter	each	1		
28	250mm Diameter	each	1		
29	300mmdiameter	each	1		
30	350mm Diameter	each	1		
31	400mm Diameter	each	1		
32	500mm Diameter	each	1		
33	600mm Diameter	each	1		

	Flanged 45° Elbow Mild-Steel Epoxy Coated			
34	50mm Diameter	each	1	
35	80mm Diameter	each	1	
36	100mm Diameter	each	1	
37	150mm Diameter	each	1	
38	200mm Diameter	each	1	
39	250mm Diameter	each	1	
40	300mmdiameter	each	1	
41	350mm Diameter	each	1	
42	400mm Diameter	each	1	
43	500mm Diameter	each	1	
44	600mm Diameter	each	1	
	Flanged 90° Elbow Mild-Steel Epoxy Coated			
45	50mm Diameter	each	1	
46	80mm Diameter	each	1	
47	100mm Diameter	each	1	
48	150mm Diameter	each	1	
49	200mm Diameter	each	1	
50	250mm Diameter	each	1	
51	300mmdiameter	each	1	
52	350mm Diameter	each	1	
53	400mm Diameter	each	1	

54	500mm Diameter	each	1	
55	600mm Diameter	each	1	
	Flanged 45°Long Radius Elbow Mild-Steel Epoxy Coated			
56	50mm Diameter	each	1	
57	80mm Diameter	each	1	
58	100mm Diameter	each	1	
59	150mm Diameter	each	1	
60	200mm Diameter	each	1	
61	250mm Diameter	each	1	
62	300mmdiameter	each	1	
63	350mm Diameter	each	1	
64	400mm Diameter	each	1	
65	500mm Diameter	each	1	
66	600mm Diameter	each	1	
	Flanged 90° Long Radius Elbow Mild-Steel Epoxy Coated			
67	50mm Diameter	each	1	
68	80mm Diameter	each	1	
69	100mm Diameter	each	1	
70	150mm Diameter	each	1	
71	200mm Diameter	each	1	
72	250mm Diameter	each	1	

73	300mmdiameter	each	1	
74	350mm Diameter	each	1	
75	400mm Diameter	each	1	
76	500mm Diameter	each	1	
77	600mm Diameter	each	1	
	Flanged 45° Wyes Mild-Steel Epoxy Coated			
78	50mm Diameter	each	1	
79	80mm Diameter	each	1	
80	100mm Diameter	each	1	
81	150mm Diameter	each	1	
82	200mm Diameter	each	1	
83	250mm Diameter	each	1	
84	300mmdiameter	each	1	
85	350mm Diameter	each	1	
86	400mm Diameter	each	1	
87	500mm Diameter	each	1	
88	600mm Diameter	each	1	
	Flanged Equal Tees, (T) Mild-Steel Epoxy Coated			
89	50mm Diameter	each	1	
90	80mm Diameter	each	1	
91	100mm Diameter	each	1	
92	150mm Diameter	each	1	

93	200mm Diameter	each	1	
94	250mm Diameter	each	1	
95	300mmdiameter	each	1	
96	350mm Diameter	each	1	
97	400mm Diameter	each	1	
98	500mm Diameter	each	1	
99	600mm Diameter	each	1	
	Flanged Concentric Reducer, Mild-Steel Epoxy Coated			
100	50mm Diameter	each	1	
101	80mm Diameter	each	1	
102	100mm Diameter	each	1	
103	150mm Diameter	each	1	
104	200mm Diameter	each	1	
105	250mm Diameter	each	1	
106	300mmdiameter	each	1	
107	350mm Diameter	each	1	
108	400mm Diameter	each	1	
109	500mm Diameter	each	1	
110	600mm Diameter	each	1	
	Double Flanged Mild-Steel Epoxy Coated Pipe (L = 200mm)			
111	50mm Diameter	each	1	
112	80mm Diameter	each	1	

113	100mm Diameter	each	1	
114	150mm Diameter	each	1	
115	200mm Diameter	each	1	
116	250mm Diameter	each	1	
117	300mmdiameter	each	1	
118	350mm Diameter	each	1	
119	400mm Diameter	each	1	
120	500mm Diameter	each	1	
121	600mm Diameter	each	1	
	Double Flanged Mild-Steel Epoxy Coated Pipe (L = 500mm)			
122	50mm Diameter	each	1	
123	80mm Diameter	each	1	
124	100mm Diameter	each	1	
125	150mm Diameter	each	1	
126	200mm Diameter	each	1	
127	250mm Diameter	each	1	
128	300mmdiameter	each	1	
129	350mm Diameter	each	1	
130	400mm Diameter	each	1	
131	500mm Diameter	each	1	
132	600mm Diameter	each	1	
	Double Flanged Mild-Steel Epoxy Coated Pipe (L = 1000mm)			

133	50mm Diameter	each	1	
134	80mm Diameter	each	1	
135	100mm Diameter	each	1	
136	150mm Diameter	each	1	
137	200mm Diameter	each	1	
138	250mm Diameter	each	1	
139	300mmdiameter	each	1	
140	350mm Diameter	each	1	
141	400mm Diameter	each	1	
142	500mm Diameter	each	1	
143	600mm Diameter	each	1	

CATEGORY I (Part 3): NITRILE RUBBER GASKET				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
1	1.5mm thick (1200mm Width)	Per Roll	1	
2	3mm thick (1200mm Width)	Per Roll	1	
3	4.5mm thick (1200mm Width)	Per Roll	1	
4	6mm thick (1200mm Width)	Per Roll	1	
5	8mm thick (1200mm Width)	Per Roll	1	
6	10mm thick (1200mm Width)	Per Roll	1	

10.CATEGORY J: ELECTRICAL CABLES

CATEGORY J: ELECTRICAL CABLES				
ITEM	**DESCRIPTION**	**UNIT OF MEASURE**	**QUANTITY**	**RATE (VAT Excl.)**
	SUPPLY and DELIVERY - including double handling if stored, pre-installation activities, quality assurance, modifications and providing required certification as per this contract.			
1	1.5mm^2 x 4 core SWA Cable including termination kits	Metre	1	
2	2.5mm^2 x 4 core SWA Cable including termination kits	Metre	1	
3	4mm^2 x 4 core SWA Cable including termination kits	Metre	1	
4	6mm^2 x 4 core SWA Cable including termination kits	Metre	1	
5	10mm^2 x 4 core SWA Cable including termination kits	Metre	1	
6	16mm^2 x 4 core SWA Cable including termination kits	Metre	1	
7	25mm^2 x 4 core SWA Cable including termination kits	Metre	1	
8	35mm^2 x 4 core SWA Cable including termination kits	Metre	1	
9	70mm^2 x 4 core SWA Cable including termination kits	Metre	1	
10	95mm^2 x 4 core SWA Cable including termination kits	Metre	1	
11	120mm^2 x 4 core SWA Cable including termination kits	Metre	1	
12	185mm^2 x 4 core SWA Cable including termination kits	Metre	1	
13	1.5mm^2 x 7 core SWA Cable including termination kits	Metre	1	

14	2.5mm^2 x 7 core SWA Cable including termination kits	Metre	1	
15	1.5mm^2 x 4 core Trialling Cable including termination kits	Metre	1	
16	2.5mm^2 x 4 core Trialling Cable including termination kits	Metre	1	
17	10mm^2 x 4 core Trialling Cable including termination kits	Metre	1	
18	16mm^2 x 4 core Trialling Cable including termination kits	Metre	1	
19	1mm^2 x 2 pair twisted Screened SWA Cable including termination kits	Metre	1	
20	1mm^2 x 4 pair twisted Screened SWA Cable including termination kits	Metre	1	
21	1mm^2 x 12 pair twisted Screened SWA Cable including termination kits	Metre	1	
22	10mm^2 x Bare Copper Earth Cable including termination kits	Metre	1	
23	16mm^2 x Bare Copper Earth Cable including termination kits	Metre	1	
24	70mm^2 x Bare Copper Earth Cable including termination kits	Metre	1	
25	95mm^2 x Bare Copper Earth Cable including termination kits	Metre	1	
26	10mm^2 x Insulated Earth Cable including termination kits	Metre	1	
27	16mm^2 x Insulated Earth Cable including termination kits	Metre	1	
28	70mm^2 x Insulated Earth Cable including termination kits	Metre	1	
29	95mm^2 x Insulated Earth Cable including termination kits	Metre	1	

- Mark Up on items not covered under the pricing schedule is limited to a 5% on the actual price of the item, not on the pricing schedule and not on profit:

  For items that fall outside the scope stipulated in this document, the following table applies. This will be limited to the items that are required for the supply and install of the equipment as set out in this document.

  The service provider is to be aware that ERWAT reserves the right to obtain quotes to check if the contractor is not overcharging with respect to such item/s. **The mark up percentage will be limited to a maximum of 5% and will be considered on a case-to-case basis and limited to the current equipment.**

Item amount incl. VAT	Percentage Mark-up
Up to R 2 000	5%
R 2 001 to R 5 000	5%
R 5 001 to R 10 000	5%
R 10 001 to R15 000	5%
Above R15 000	5%

I, the undersigned, the authorised designated signatory, undertake to carry out the works in accordance with the conditions of contract, the specifications for the tender sum as indicated and within the time for completion as specified in the Contract.

BIDDER'S name: _____

BIDDER'S signature: _____ Date: _____

Name of Firm: _____

Address _____

_____

_____

Telephone number: _____

Fax Number: _____

Cellular number: _____

E Mail Address: _____

LIST OF IMPORTED ITEMS

Contractors to list all items which are not solely South African manufactured.

ITEM	DESCRIPTION	R VALUE	ROE
1			
2			
3			
4			
5			
6			
7			
8			
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12			
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APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY, DELIVERY & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

C3 SCOPE OF WORK

DETAILED CONTENTS (VOLUME 3)

PART C3 SCOPE OF WORKS

C3.1 DESCRIPTION OF THE WORKS

C3.1.1 Background

ERWAT Wastewater Care Works consists of various pump systems with various pumps installed to recirculate and transfer various flows. Each of these pump motors are connected to the motor control panel which is inside the pump system connected by means of electrical cables and other related auxiliaries. The mentioned pumping systems were designed based on the conditions which were prevalent two decades ago, thus, these systems prove to be inefficient in today's conditions which might be due to an increases in population in the surrounding areas both residentially and industrially, state of the equipment, and other changes in operational functions.

Thus, ERWAT requires the services of an external service provider(s) to replace pumps that are operating outside the expected or required service life and are uneconomical to repair on an "as and when required" basis for a period of 36 months. The equipment mentioned is critical in the operation of ERWAT and therefore needs qualified and experienced service provider/s for the complete supply, delivery and installation. The current ERWAT team will be working in close relation with the appointed bidders throughout the contract period on the agreed terms of the contract to build capacity within the maintenance team.

C3.1.2 General and Mandatory Requirements

C3.1.2.1 General Requirements

a. Site induction training has to be completed before any work can be undertaken. (both general and site specific)

b. The contractor must comply with the ERWAT Permit to Work and Safe operation procedures.

c. All the relevant work permits and authorization has to be obtained before any work can be under taken.

d. All work done and equipment supplied has to be in accordance with the applicable standards as listed in this document.

e. No work shall be undertaken without an official purchase order or written confirmation via e-mail in case of an emergency from the designated ERWAT representative.

f. No equipment may be removed from site without written permission from the relevant plant manager.

g. The installation of any equipment shall include the putting back into operation, testing, special testing (if required) and adjustments on the equipment.

h. A project and quality control plan will be required for any installation of equipment.

i. All the required tools, consumables, testing facilities, and other requirements to perform the work as per the Contract shall be provided by the contractor.

j. ERWAT reserves the right to hold the contractor responsible for any equipment that will be damaged due to the contractor's negligence or poor workmanship.

k. This bid will be evaluated and awarded per district to a maximum of one (1) bidders in each district, however, in cases where it is not possible to award a maximum of one district to a bidder (due to the number of acceptable bidders), then a bidder may be awarded more than one district, and preference will be given to the highest scoring bidder.

l. The Contract is for a duration of ***Thirty-Six 36 (No.) Calendar Months.***

m. Prices shall be **FIXED** and **FIRM** for the first 12 months of the **Contract. Price increments will be based on MBD 3.2 pricing structure annually on the anniversary of this tender**

n. ALL new Equipment and newly supplied parts shall carry A MINIMUM twelve (12 No.) calendar months WARRANTY from date of acceptance by ERWAT representative

C3.1.2.2 Mandatory Requirements

Scope related Information and Documentation required:	
Please ensure that the following supporting documents are attached to your Bid Document. Failure to submit the below mentioned documents will result in disqualification of your bid.	
Item	**Description of Document/Proof Sought**
1	The Contract CIDB Rating required for this Contract is 8 ME Bidders shall submit proof of Current Registration.

C3.1.3 Staff Complement

Bidding companies are required to have the following staff complement available for the duration of this contract with a minimum of three years' experience per staff member.

NO	STAFF MEMBER	QUALIFICATION	BIDDERS TO PROVIDE PROOF OF QUALIFICATION WHERE THEY COMPLY
1.	Site Supervisor	National Diploma: Mechanical Engineering	
2.	Installation Fitter	Trade Tested as an Artisan	
3.	Installation Rigger	Trade Tested as an Artisan	
4.	Electrician	Trade Tested as an Electrician	
5.	Health and Safety Officer	Safety Management Certification	

C3.1.4 Extent of the Works

The Scope of Work for this Contract is (but not limited to): The Contractor will be required to perform the supply, delivery and installation work associated with this project, including the supply of selected equipment and items as detailed within the schedule of quantities. The supply of all such equipment and or components must fully comply with the specification contained in this document and must be approved by ERWAT. This scope of work shall include the furnishing of all labour, material and services for the Supply, Manufacture, Testing, Works Inspection, Delivery to Site, Offloading, Placing into Position, Site Assembly, Pre-commissioning, Commissioning Assistance and Rectification of Defects within the Warranty period of twelve (12 No.) months per section undertaken;

The Contractor's Proposal shall include the following components as a minimum requirement (once awarded):

- Plans indicating the General Layout of the Works
- Description and/or sketches/drawings of Mechanical and Electrical equipment
- Quality Assurance system for all aspects of the work

The Works described include all works required for the manufacture, supply, installation and commissioning of new pumping equipment as and when required as follows:

- Self-Priming Pumps
- Submersible Pumps
- Immersible Pumps
- Progressive Cavity Pumps
- Propeller Pumps
- End Suction Pumps
- Submersible Mixers
- Mobile Diesel Pumps
- Auxi;iaries

a. Isolate and remove the old pumps including;

   (i) The disconnection of electrical cables.

   (ii) Isolation of valves, pipes and other related auxiliaries.

b. Measurements and sizing of the equipment. Upon appointment Contractor to confirm flow, pressure head, application and solids handling requirements per section allocated, before proceeding with the ordering of the new pump(s) as per the Bill of Quantities.

c. Procuring new equipment for the project as per the Bill of Quantities.

d. The Contractor shall be fully responsible for the complete pump installation including the alignment of the pumps/electric motors (even though the electric motors for Self-Priming and End-Suction Pumps will supplied by others). As such, the contractor shall also supply pulleys, belts, keys and couplings for both drive-ends.

e. The Contractor shall be fully responsible for connecting the electrical cables from the existing or new electric motors to the electrical panel (starters or variable speed drives).

f. Production of the drawings prior and post the installation in the listed formats (PFDs, P&IDs, 3D isometric drawings, 2D third angle drawings etc.).

g. The Pumps shall have a nameplate embedded on its casing body containing the following, which will also be reflected on Operations and Maintenance Manual;

- Manufacturer's Name
- Serial/Model Numbers
- Pump Type
- Flow (l/s) & Head (m)
- Pump Rotational Speed (rpm)
- Material
- Temperature (°C)
- And any other additional information

h. Draft an operating philosophy of the newly installed pump. (Tailor-Made)

i. Draft a maintenance philosophy for the newly installed pump. (Tailor-Made)

j. Store as per instruction of the ERWAT Representative(s). NB: All disassembled equipment to be transport to Waterval Water Care Works storage facility.

C3.1.4.1 Interpretations

A. Abbreviations

In this Specification, the following abbreviations will apply: This specifications will be applicable to equipment delivered and will not form part of the evaluation process.

ASTM A304 - 16	Standard Specification for Carbon and Alloy Steel Bars Subject to End-Quench Hardenability Requirements
HRC	Rockwell Hardness measured on the C scale.
EN 1.4057 or AISI 431	Grades for stainless steel
SANS 1091: 2004	National colour standards for paint
SANS 1186-1: 2008	Symbolic Safety Signs Part I: Standards signs and general requirements
SANS 1123:2015	South African pipe flanges standard.
SANS 10103: 2003	The measurement and rating of environmental noise with respect to annoyance and speech communication.
SANS 10140 – 1 : 2008	Identification colour marking
SABS 763	General coating thickness
SANS 62	Standard for Medium Duty for mild steel process pipe
SANS 1062: 1985	Pressure gauges
SANS 664/SANS 665	Standards for resilient seal gate valves
SANS 10142 – 1 – 2003	The wiring of premises Part1: Low-voltage
SANS 455: 2004	Covered electrodes for the manual arc welding of carbon and carbon manganese steels.
SANS 10044 – 1: 2004	Welding Part I to IV
SANS 10238: 2005	Welding and thermal cutting processes – Health and Safety
SANS 32 1997/EN 10240: 1997	Internal and/ or external protective coatings for steel tubes – specification for hot-dip galvanized coatings applied in automatic plants
SANS 121: 2000/ISO 1461: 1999	Hot-dip galvanized coatings om fabricated iron and steel articles – Specification and test methods.
SANS 3575: 2008/ISO 3575: 2005	Continuous hot-dip zinc-coated carbon steel sheet of commercial, lock forming and drawings.
SABS 0214	The design, fabrication and inspection of articles for hot-dip galvanising
ISO 9906:2012	Standards for hydraulic performance tests for customers' acceptance of rotodynamic pumps (centrifugal, mixed flow and axial pumps)
EN GJL-250 or ASTM-No35B	Grades for Grey Cast Iron
ISO 3506-1:2009	Mechanical properties of corrosion-resistant stainless steel fasteners - Part 1: bolts, screws and studs
SANS 1973-8 & SANS 60439-1	Standards low-voltage switchgear and control gear assemblies

C3.1.4.2 Technical Specification

A. Category A: Self-Priming Pumps;

I. Pump Casing;

Self-Priming pump casing shall be cast iron with integral volute scroll. Mounting feet sized to prevent tipping or binding when pump is completely disassembled for maintenance. Fill port cover plate, shall be opened after loosening a hand nut/clamp bar assembly. In consideration for safety, hand nut threads must provide slow release of pressure, and the clamp bar shall be retained by detente lugs. A Teflon gasket shall prevent adhesion of the fill port cover to the casing. Casing drain plug to insure complete and rapid draining.

II. Impeller;

Impeller shall be ductile iron, two-vane, semi-open, non-clog, with integral pump out vanes on the back shroud. Impeller shall thread onto the pump shaft and be secured with a lock screw and conical washer.

The solid management system should be designed for the management of sanitary wipes, plastic bags, feathers, hair, sludge, and all other types of stringy solids. This is shall be in form of a cutting ring with sharp edges fixed in the impeller chamber opposite the impeller.

III. Mechanical Seal;

Shaft seal shall be cartridge oil lubricated mechanical type. The stationary and rotating seal faces shall be tungsten titanium carbide alloy. The stationary seal seat shall be double floating by virtue of a dual O-ring design; an external O-ring secures the stationary seat to the seal plate, and an internal O-ring holds the faces in alignment during periods of mechanical or hydraulic shock. Elastomers shall be a synthetic rubber and fluoropolymer; cage and spring to be stainless steel. Seal shall be oil lubricated from a dedicated reservoir.

IV. Shaft;

The Self-Priming pump shafts shall be manufactured from alloy steel or its equivalent due to its properties like strength, toughness, corrosion resistance and fatigue strength.

V. Pump Rotating Assembly;

Rotating assembly, which includes impeller, shaft, mechanical shaft seal, lip seals, bearings, seal plate and bearing housing, must be removable as a single unit without disturbing the pump casing or piping. Seal plate and bearing housing shall be cast iron. Separate oil filled cavities, vented to atmosphere, shall be provided for shaft seal and bearings. Cavities must be cooled by the liquid pumped. Three lip seals will prevent leakage of oil. Seal plate and bearing housing shall be cast iron. Separate oil filled cavities, vented to atmosphere, shall be provided for shaft seal and bearings. Cavities must be cooled by the liquid pumped. Three lip seals will prevent leakage of oil. The bearing cavity shall have an oil level sight gauge and fill plug check valve. The clear sight gauge shall provide easy monitoring of the bearing cavity oil level and condition of oil without removal of the fill plug check valve. The check valve shall vent the cavity but prevent introduction of moist air to the bearings. The seal cavity shall have an oil level sight gauge and fill/vent plug. The clear sight gauge shall provide easy monitoring of the seal cavity oil level and condition of oil without removal of the fill/vent plug. Double lip seal shall provide an atmospheric path providing positive protection of bearings, with capability for external drainage monitoring.

VI. Base Plate;

The base plate shall be manufactured from stainless 304L and its dimensions must suit the currently platform where the new pump will be mounted.

VII. Bearing;

The Bearings shall be anti-friction ball type of proper size and design to withstand all radial and thrust loads expected during normal operation. Bearings shall be oil lubricated from a dedicated reservoir. Pump designs which use the same oil to lubricate the bearings and shaft seal shall not be acceptable.

B. Category B: Submersible Pumps (Wet Installations);

I. Pump Construction;

Major pump components shall be of cast iron with smooth surfaces devoid of blow holes or other casting irregularities. All exposed nuts or bolts shall be made of stainless steel A2 according to ISO 3506-1 or ASTM 304 or better. The outer surfaces of the pump shall be protected by suitable painting system including a two-component high-solid top coating. Sealing design shall incorporate metal-to-metal contact between machined surfaces. Pump/Motor unit mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Rectangular cross section rubber, paper or synthetic gaskets that require specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other better devices shall be used.

II. Impeller;

The impeller(s) shall be of semi open multi vane, back-swept leading edge, non-clog design and dynamically balanced. The leading edges shall be horizontal and due to the backswept form, transport any debris to the perimeter of the inlet. The impeller vanes shall be self-cleaned upon each rotation as they pass across a sharp relief groove and shall keep the vane clear of debris, maintaining an unobstructed pumping. The impeller shall have heavily back swept leading edges with a specific angle distribution enabling the capability of handling solids, fibrous materials, heavy sludge and other matter found in waste water. The clearance between the insert ring and the impeller shall be adjustable.

III. Mechanical Seal;

Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seals, each having an independent spring system. The seal material shall consist of corrosion resistant wolfram carbide (Corrosion resistant tungsten carbide). The seals shall require neither maintenance nor adjustment and shall be capable of operating in either clockwise or counter clockwise direction of rotation without damage or loss of seal function. Should both seals fail and allow fluid to enter the stator housing, an alarm shall stop the pump before the fluid come into contact with the lower bearings, or the stator. The outer primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide ring. The inner secondary seal, located between the seal chamber and the seal inspection chamber shall be an active seal. The inner seal shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide seal ring. The rotating inner seal ring shall have small back-swept grooves laser inscribed upon its face to act as a micro pump as it rotates, returning any fluid that should enter the dry motor chamber back into the lubricant chamber. All seal rings shall be individual solid sintered rings. Each seal interface shall be held in place by its own spring system. The seals shall not depend upon direction of rotation for sealing. Mounting of the lower seal on the impeller hub is not acceptable. Shaft seals without positively driven rotating members or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces are not acceptable. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance.

Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and shall provide capacity for lubricant expansion. The seal lubricant chamber shall have one drain and one inspection plug that are accessible from the exterior of the motor unit. The seal system shall not rely upon the pumped media for lubrication.

In the case of a seal cavity, the area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove. This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

The following seal types shall not be considered acceptable or equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to affect sealing shall be used.

IV. Shaft;

The Pump and motor shaft shall be a solid continuous shaft. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The Shaft shall be manufactured from suitable 316L stainless steel (EN 1.4057 or AISI 431) due to its properties like strength, toughness, corrosion resistance and fatigue strength.shafts shall be manufactured from alloy steel or its equivalent due to its properties like strength, toughness, corrosion resistance and fatigue strength.

V. Pump Volute;

Rotating assembly Pump volute shall be single-piece non-concentric design with smooth passages large enough to pass any solids that may enter the impeller. The insert ring (suction cover) shall be replaceable. Pump volute shall be of cast iron.

VI. Bearing;

The shaft shall rotate on grease lubricated bearings. The support bearing, provided for radial forces, shall be a rolling bearing. The main bearings shall consist of a double row angular contact ball bearing.

VII. Cable Entry Seal;

The cable entry seal design shall not require specific torque requirements to ensure a watertight and submersible seal. The cable entry shall consist of dual cylindrical elastomer sleeves, flanked by washers, all having a close tolerance fit against the cable and the cable entry. The sleeves shall be compressed by the cable entry unit, thus providing a strain relief function. The assembly shall permit easy changing of the cable. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.

VIII. Cable Junction Box;

The cable entry junction chamber and motor shall be separated by a feed through type terminal board of non-hygroscopic material, which shall isolate the stator housing from foreign material gaining access through the pump top.

IX. Guide Bars and Guide Chains:

- Stainless steel upper guide bar bracket
- Stainless steel guide bar set (316L)
- •Stainless steel lifting chain (316L)

C. Category C: Immersible Pumps (Dry Installation)

I. Pump Construction;

Major pump components shall be of cast iron with smooth surfaces devoid of blow holes or other casting irregularities. All exposed nuts or bolts shall be made of stainless steel A2 according to ISO 3506-1 or ASTM 304 or better. The outer surfaces of the pump shall be protected by suitable painting system including a two-component high-solid top coating. Sealing design shall incorporate metal-to-metal contact between machined surfaces. Pump/Motor unit mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Rectangular cross section rubber, paper or synthetic gaskets that require specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other better devices shall be used.

II. Impeller;

The impeller(s) shall be of semi open multi vane, back-swept leading edge, non-clog design and dynamically balanced. The leading edges shall be horizontal and due to the backswept form, transport any debris to the perimeter of the inlet. The impeller vanes shall be self-cleaned upon each rotation as they pass across a sharp relief groove and shall keep the vane clear of debris, maintaining an unobstructed pumping. The impeller shall have heavily back swept leading edges with a specific angle distribution enabling the capability of handling solids, fibrous materials, heavy sludge and other matter found in waste water. The clearance between the insert ring and the impeller shall be adjustable.

III. Mechanical Seal;

Each pump shall be provided with a positively driven dual, tandem mechanical shaft seal system consisting of two seals, each having an independent spring system. The seal material shall consist of corrosion resistant wolfram carbide (Corrosion resistant tungsten carbide). The seals shall require neither maintenance nor adjustment and shall be capable of operating in either clockwise or counter clockwise direction of rotation without damage or loss of seal function. Should both seals fail and allow fluid to enter the stator housing, an alarm shall stop the pump before the fluid come into contact with the lower bearings, or the stator. The outer primary seal, located between the pump and seal chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide ring. The inner secondary seal, located between the seal chamber and the seal inspection chamber shall be an active seal. The inner seal shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide seal ring. The rotating inner seal ring shall have small back-swept grooves laser inscribed upon its face to act as a micro pump as it rotates, returning any fluid that should enter the dry motor chamber back into the lubricant chamber. All seal rings shall be individual solid sintered rings. Each seal interface shall be held in place by its own spring system. The seals shall not depend upon direction of rotation for sealing. Mounting of the lower seal on the impeller hub is not acceptable. Shaft seals without positively driven rotating members or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces are not acceptable. The seal springs shall be isolated from the pumped media to prevent materials from packing around them, limiting their performance.

Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and shall provide capacity for lubricant expansion. The seal lubricant chamber shall have one drain and one inspection plug that are accessible from the exterior of the motor unit. The seal system shall not rely upon the pumped media for lubrication.

In the case of a seal cavity, the area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove. This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

The following seal types shall not be considered acceptable or equal to the dual independent seal specified: shaft seals without positively driven rotating members, or conventional double mechanical seals containing either a common single or double spring acting between the upper and lower seal faces. No system requiring a pressure differential to offset pressure and to affect sealing shall be used.

IV. Shaft;

The Pump and motor shaft shall be a solid continuous shaft. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The Shaft shall be manufactured from suitable 316L stainless steel (EN 1.4057 or AISI 431) due to its properties like strength, toughness, corrosion resistance and fatigue strength.shafts shall be manufactured from AISI 4140 alloy steel or its equivalent due to its properties like strength, toughness, corrosion resistance and fatigue strength.

V. Pump Volute;

Rotating assembly Pump volute shall be single-piece non-concentric design with smooth passages large enough to pass any solids that may enter the impeller. The insert ring (suction cover) shall be replaceable. Pump volute shall be of cast iron.

VI. Bearing;

The shaft shall rotate on grease lubricated bearings. The support bearing, provided for radial forces, shall be a rolling bearing. The main bearings shall consist of a double row angular contact ball bearing.

VII. Cable Entry Seal;

The cable entry seal design shall not require specific torque requirements to ensure a watertight and submersible seal. The cable entry shall consist of dual cylindrical elastomer sleeves, flanked by washers, all having a close tolerance fit against the cable and the cable entry. The sleeves shall be compressed by the cable entry unit, thus providing a strain relief function. The assembly shall permit easy changing of the cable. Epoxies, silicones, or other secondary sealing systems shall not be considered acceptable.

VIII. Cable Junction Box;

The cable entry junction chamber and motor shall be separated by a feed through type terminal board of non-hygroscopic material, which shall isolate the stator housing from foreign material gaining access through the pump top.

IX. Guide Bars and Guide Chains:

- Stainless steel upper guide bar bracket
- Stainless steel guide bar set (316L)
- •Stainless steel lifting chain (316L)

D. Category D: Progressive Cavity Pumps;

I. Pump Casing;

Major Suction and discharge housings are to be manufactured from GG25 cast or approved material suitable for the pumped liquid.

Casings shall be designed for not less than the following working pressures or 1.5 times the actual working total discharge pressure, whichever is the greater.

All casings shall be provided with the following tapings as a minimum requirement:-

- One suction pressure gauge tapping
- One discharge pressure gauge tapping
- One bleeder cock tapping
- One filling point tapping.
- Suitable tapping or, where possible, internal drilling to provide water for the glands

Unless otherwise stated the dimensions and drilling of the suction and discharge flanges shall be SANS 1123 to the design pressures as specified but with a minimum of 16 Bar.

The pressure rating of the flanges shall at least be equal to the maximum static pressure plus the pump shut-off pressure.

II. Drive Shaft;

The drive shaft shall be manufactured from high quality steel compatible with the pumped liquid. The shafts shall be hard chromed-plated in the gland area to ensure excellent wear resistance.

III. Stuffing Box;

The stuffing box shall be designed for heavy duties. The gland shall be packed with a braided packing of appropriate material to suit the pumped liquid and operating pressure. around them, limiting their performance.

IV. Mechanical Seal;

Seal housing shall be manufactured as separate castings from 316 stainless steel or appropriate contact material and shall fit in place of the stuffing box. The seal housing shall have large clearance for the internal rotary seal to prevent clogging. The seals shall be double where appropriate. The mechanical seal is to be so situated in the suction housing to ensure the best possible flushing of the seal by the product. Additionally the mechanical seal housing is to have a flushing connection. Seal faces are to be silicon carbide or tungsten carbide. Full details of the seals and glands indicating the materials, finishes, clearances etc. shall be submitted with the Tender.

V. Castings;

Suction and discharge housings are to be manufactured from GG25 cast.

VI. Bearing;

Shall be high thrust, taper-roller or ball bearings is adequate proportions designed to last for at least 40 000 working hours under the working conditions.

VII. Flex-Shaft Drive;

The drive between the main shaft and the rotor shall be by means of a flexible drive shaft adequately proportioned for torque and thrust for either direction of rotation. Morse tapers shall be fitted on both ends of the flexible shaft.

VIII. Coupling Rods;

Shall be proportioned to handle the rotor load and eccentricity.

IX. Rotors;

Shall be hardened and hard chrome plated were appropriate. The rotors shall be manufactured E-8, 316 stainless steel or special alloy, as appropriate for the pumped liquid.

X. Stator Housing

Shall be manufactured from an approved thick walled seamless steel tube.

XI. Stators

Shall be bonded to the stator housing. The stator material shall be either nitrile, EPDM or other approved material to be compatible with the pumped liquid. Temperature sensors shall be provided on the stator to prevent dry running. The stator design shall include a moulded conical entry on the suction side to increase chamber filling efficiency.

XII. Lubrication

In the case where oil lubrication is required, adequate provision shall be made for the cooling of the oil. The bearings shall be required to operate at temperatures no higher than 60°C.

Oil reservoirs of sufficient capacity shall be fitted with easily accessible oil level indicators, which are to be clearly marked in order to indicate the oil standing and running levels.

XIII. Vent Cocks;

Vent cocks shall be fitted at all high points to the pump casing. These cocks shall be adequately sized in order to allow the trapped air to be released freely.

An automatic air vent shall be fitted to each pump casing if specified. This device shall be suitable for the remote operation of an indicator to show the open and closed positions of the air vent.

XIV. Base Plates;

The base plate of the pump and motor shall be rigid. The pump and motor shall be situated on the upper face of each base plate, which shall be machined flat and smooth to ensure that the pump and motor are bedded properly without the use of spacers.

The pump/motor base plate shall be completely aligned prior to grouting and provision shall be made to grout within the base plate itself to facilitate vibration-free operation.

Base plates which have a mass greater than 200 kg shall have two jacking bolts at right angles with a lock nut at every corner of the unit.

XV. Drive Motor

The pump shall be driven by a fixed electric speed motor.

XVI. Motor/Gearbox/Pump Coupling;

The motor/gearbox / pump coupling shall be fully rated to transmit the motor full load power and tested to prove the above features together with static and dynamic balance. The motor shall be coupled to the gearbox input shaft with either a V-belt or a flexible coupling. V-belts and couplings are to be provided with protective cover guards

XVII. Monitoring Devices

Full detail of all monitoring devices offered must be submitted with the Tender however the minimum protection required is as follows:

Pressure Gauges

Pressure gauges shall be fitted with an isolating cock, shall be vibration and shock resistant and shall be calibrated to read with an accuracy of ±1% of the indicated pressure. Three 20mm minimum diameter ball valves shall be employed to zero the gauge, to isolate it and to vent to atmosphere. A chemical seal shall be used to insulate the gauge from the media being measured.

The faceplate diameters of the pressure gauges shall be at least 100 mm. The gauges shall indicate the water pressure in kilopascal and shall have a range of a maximum of 50% higher than the normal maximum working pressure. All gauge glass must conform to internationally recognized standards. These standards include DIN 7081, BS 3463 and JIS B 8211. A calibration certificate is to be provided with each pressure gauge.

Temperature Detectors

If required oil lubricated bearings and glands offered shall be fitted with temperature detectors. The temperature detectors shall be PT100 – RTD's.

If grease lubricated bearings are offered, the Bidder will indicate in his Tender if temperature detectors can in fact be used. If temperature detectors are not feasible, an alternative means of monitoring bearings must be offered.

No-flow Protection

Each pump shall be protected against no flow by a flow meter installed in the discharge line from the pump.

Indicator on Automatic Air Vent

If an automatic air vent is required for the pump casing, it shall be fitted with an indicator to indicate the open and closed positions of the air vent. The air vent shall be suitable for remote operation and air vent control shall be mounted on the control panel inside the pump station.

Gland Leakage

If a gland leakage device is required in order to monitor the gland leakage it shall be supplied and fitted with adjustable alarm contacts designed to close when gland leakage rises to a pre-set value.

E. <u>Category E: Propeller Pumps(Axial Flow Type);</u>

I. <u>Pump Casing;</u>

The pump body shall be fabricated from Grade 300 W galvanised mild steel in accordance with SANS 1431 : 2003, or made of cast iron and shall be designed to house the upper and lower bearing assemblies.

II. <u>Propeller Shaft;</u>

The propeller shaft shall be manufactured from 304 L stainless steel suitable designed to transmit the imposed torque loads induced by the propeller and withstand all cantilevered loads imposed under undue conditions during operation.

III. <u>Propeller Blades;</u>

The propeller blade shall be of a well proven swept back design selected to achieve the required head and flow characteristics and must be manufactured from 304 L cast stainless steel. The propeller blade shall be locked to the lower end of the shaft.

IV. <u>Balancing;</u>

The blade assembly shall be subjected to static and dynamic balancing before final onsite installation. Vibrations in operation shall be kept to a minimum and it will be the Contractors responsibility to check this torsional vibration for each pump set assembly, in-situ.

The propeller shall have a maximum vibration velocity of 2.5 mm/s at specified conditions. Static balancing alone is not acceptable as there is no qualitative measurement of the remaining amount of unbalance left in the assembly, and does not confront the basic definition of checking unbalance against a known standard.

V. Throat Tube;

A suitable designed throat tube constructed from 304 L stainless steel shall be provided. This item shall be grouted into the exiting civil structure.

The clearance between the propeller and throat tube must ensure that a minimum of liquid slip takes place thus maintaining maximum efficiency. Bell mouthed inlet and outlet openings must be incorporated to ensure smooth entry and exit flow conditions.

VI. Corrosion Protection;

All mild steel members shall be prepared and coated in accordance with acceptable Corrosion Protection standards for wastewater applications.

The corrosion protection of Stainless steel welds shall entail pickling and passivating in accordance with acceptable Corrosion Protection standards for wastewater applications.

VII. Bearings;

All bearings shall be designed for a life of at least 100 000 hours at an (L 10) rating. Bearings for the output shaft shall be designed to withstand bending, up thrust, down pull and radial loads imposed by the pump impellor. Bidder's shall indicate what these forces are and how these shall be accommodated.

Calculations shall be submitted with the Tender. The bearings shall carry all axial and radial loads and accommodate any thermal expansion. Bearings should be sealed against the ingress of liquid and must be selected for a L10 life in excess of 100 000 hours.

For ease of lubrication all bearing grease pipes must be piped to grease nipples on the outer cover of the pump support frame.

VIII. Fasteners;

All submerged and concrete securing fasteners shall be 316 SS. All mating flanges shall be sealed against the ingress of any crevice corrosion by means of a sealant suitable for underwater conditions and approved by the Engineer.

IX. Motor and Drive;

The upper end of the drive assembly must be fitted with an adjustable tensioning bracket for mounting the drive motor. This arrangement shall make provision for adjustment of "v" belt tension and allow for changing pulleys without difficulty. All rotating elements shall be provided with adequate guarding to cater for all probable pulley sizes.

The guards must be domed to avoid water ponding and contamination of the "v" belts and upper bearing, whilst allowing adequate air cooling for belts.

A suitably rated motor must be provided and the motor power transmitted to the shaft by adequately rated "v" belts. Should one belt break, the remaining belt / belts must be capable of transmitting the required power without overload.

The electric motor must be rated at least 20% above the maximum absorbed power and must be weatherproofed for unprotected conditions.

X. Flap Gates

Each pump chamber delivery port shall be fitted with a 304 L stainless steel non-return flap to prevent the flow from the duty pump flowing back through the standby unit delivery port.

The gates shall be mounted in a suitable 304 L stainless steel frame correctly sized to suite the delivery port detailed. The flap gate shall be bolted over the opening onto the concrete wall surface. The frame shall be sealed against the concrete with a durable and approved material.

A gate with robust hinges along the upper edge must be suspended from the frame and swing closed under no flow conditions with minimal pressure differential. The hinge design must allow the gate to seat squarely on the seat in the frame. Adequately sized Stainless Steel mounting bolts shall be used to fix the frame in position.

XI. Operation

Provision must be made to vary the blade pitch and the rotational speed, the latter by changing a pulley on the V-belt drive.

XII. Installation

The pump shall be placed on a mounted base which shall be suitable for bolting to the concrete plate form floor above the pump chamber. Levelling spacer with a minimum thickness of 20mm shall be grouted by means of a non-shrink grout between the base plate and the concrete surface.

F. Category G End Suction Pump;

I. Pump Casing;

The pump casings shall be manufactured from cast iron or cast steel depending on the stresses corresponding to the required test pressures. Unless otherwise stated the dimensions and drilling of the suction and discharge flanges shall be SANS 1123 to the design pressures as specified but with a minimum of 10 Bar. The pressure rating of the flanges shall at least be equal to the maximum static pressure plus the pump shut-off pressure.

II. Impeller;

Each impeller after machining and dressing shall be independently statically balanced and the complete rotating assembly with coupling shall be dynamically balanced. All impellers shall be of a non over loading design. Impellers shall be securely keyed and fixed to the shaft by means of suitable shaft nuts and locking sleeves. All bolting devices must be securely locked so that they cannot accidentally come loose. Bolting devices shall be made of corrosion resistant materials.

III. Mechanical Seal;

Shaft seal shall be cartridge oil lubricated mechanical type. The stationary and rotating seal faces shall be tungsten titanium carbide alloy. The stationary seal seat shall be double floating by virtue of a dual O-ring design; an external O-ring secures the stationary seat to the seal plate, and an internal O-ring holds the faces in alignment during periods of mechanical or hydraulic shock. Elastomers shall be a synthetic rubber and fluoropolymer; cage and spring to be stainless steel. Seal shall be oil lubricated from a dedicated reservoir.

IV. Shaft;

The pump shafts shall be manufactured from stainless steel alloys or its equivalent due to its properties like strength, toughness, corrosion resistance and fatigue strength.

V. No-Flow Protection;

Each pump shall be protected against no flow by a flow meter installed in the discharge line from the pump..

VI. Base Plate;

The base plate shall be manufactured from stainless 304L and its dimensions must suit the currently platform where the new pump will be mounted. The base plate of the pump and motor shall be rigid. Base plates which have a mass greater than 200 kg shall have two jacking bolts at right angles with a lock nut at every corner of the unit.

VII. Bearing;

The Bearings shall be anti-friction ball type of proper size and design to withstand all radial and thrust loads expected during normal operation. Bearings shall be oil lubricated from a dedicated reservoir. Pump designs which use the same oil to lubricate the bearings and shaft seal shall not be acceptable.

G. Category G: Submersible Mixers;

I. Design

- Fully floodable submersible mixer
- Vertical/Horizontal installation

II. Propeller

- Self-cleaning propeller

III. Drive

- Three-phase asynchronous squirrel-cage motor
- Motors integrated in explosion-proof submersible mixers.

IV. Shaft seal

- Two bi-directional mechanical seals in tandem arrangement, with liquid reservoir.

V. Bearings

- Grease-packed rolling element bearings sealed for life
-

H. Category H: Mobile Diesel Pumps

VI. Pump Design

Pumps shall be horizontal, self-priming centrifugal type, designed specifically for handling raw, unscreened, domestic sanitary sewage.

The impeller shall be of semi open multi vane, back-swept and non-clog design.

VII. Self-Cleaning Wear Plate

A replaceable wear plate secured to the back cover plate by studs and nuts. Wear plate shall be self-cleaning design ensuring that debris is cleared away and does not collect on the impeller vanes.

Rotating assembly, which includes impeller, shaft, mechanical shaft seal, lip seals, bearings, seal plate and bearing housing, must be removable as a single unit without disturbing the pump casing or piping. Seal plate and bearing housing shall be cast iron.

VIII. Electrical Panel

- Enclosure material should be of polyester/plastic non-conductive material.
- Enclosure should have a minimum IP rating of 65 to eliminate moisture ingress.

IX. Trailer Unit Specification

Pump and Engine will be mounted on a custom fabricated roadworthy single axle trailer complete with integrated fuel tank, spare wheel lifting beam and control box.

The following shall also be included:

a. Integrated fuel tank with a diesel holding capacity of at least 200 Litres
    - Diesel Anti-siphon device to be installed
b. Centre Lifting beam
c. Single axle fitted with rims and tyres
d. Fitted with spare wheel
e. Drop legs on each corner
f. LED Brake and indicator lights
g. Two revolving strobe lights fitted on trailer for night time visibility with a work light at the back for night time operation.
h. Fire extinguisher (Dry Chemical Powder) 9kg with heavy duty metal bracket
i. Roadworthy

I. Gaskets;

The gaskets to be utilized between the joined flanges of the valves, pumps, and pipework shall be manufactured from Nitrile Rubber (NBR – Acrylonitrile Butadiene).

J. Fasteners;

Bolt and nuts to join the flanges of pipes, pumps and valves together shall be manufactured from stainless steel (316L).

K. Installation

The Bidder must include for the complete installation and with the auxiliaries of the plant in running order, including the connection of existing cables from the MCC panel to the electric motor (which will be existing or new supplied by others). This will also include ensuring the concrete plinth and baseplates are compatible and in a very good condition for mounting. Detailed drawings of the complete installations have to be submitted for approval to the engineer.

L. Testing;

The following tests are to be carried out:

i. At the supplier's premises, before the complete set of the Pump can be delivered to site, ERWAT Representatives must be present during the test to satisfy them that the complete set of the Pump comply with the specification and delivers the specified output. ERWAT must be timeously advised of the date for the test.

ii. The test shall include a simulated test run at the supplier's premises to establish the mechanical integrity of the assembled equipment, site performance tests to demonstrate efficiency, electric motor insulation test, pressure tests and rotation direction check.

iii. The Contractor shall provide all instruments and equipment required for testing and any water, power and fuel required for the commissioning and testing.

iv. Test report/certificate of the tests as specified under (ii) is to be submitted to ERWAT.

v. Visual inspections shall also form part of this contract; ERWAT Representatives must also be part of this process to witness and signed off the activity pre-assembly and/or post assembly to verify the quality of material used and the required dimensions.

vi. The Bidder upon being awarded the contract must submit Product Quality Plan or Quality Control Plan which outlines the stages that requires intervention from ERWAT's Representative I.e. Visual Inspection, Simulation Test Run, Installation and Commissioning Stages.

vii. Duty points shall be guaranteed either by ISO 9906 or Hydraulic institute.

C3.1.4.3 Location of the Works

ERWAT WCW	Stand/ Farm Positioned	Street Name	Co-ordinates
Drainage District 3			
Esther Park	Park 753, Ester Park, Extension	R25	S 26°05'58" E28°11'02"
Hartebeestfontein	Portion 20 & Remaining of Portion 4 of farm Hartebeestfontein 17	Bapsfontein Road, Norkem Park, Kempton park	S 26°01'11" E 28°17'1"
Olifantsfontein	Olifantsfontein 402 IR	Ceramic Road, Olifantsfontein	S 26°56'26" E 28°12'56"
Rynfield	Portion 75 of Vlakfontein 161	Sarel Cilliers, Rynfield	S 26°09'37" E 28°21'30"
Benoni	Remaining Portion 6 of Rietfontein	Lancaster Road, Benoni	S 26°12'30" E 28°19'01"
Drainage District 4			
Ancor	Remaining Extension of Portion 151 farm Daggafontein 125	Ermelo Road, Springs	S 26°16'11" E 28°28'56"
Daveyton	Daveyton	Holfontein Road, Etwatwa	S 26°12'30" E 28°19'01"
Jan Smuts	Portion 73 of farm Weltevreden 118	Wanderers Street Extension, Brakpan	S 25°57'43" E 28°12'49"
JP Marais	Portion 70 of farm Modderfontein 76	Cnr N12 / Kingsway Road	S 25°57'43" E 28°12'49"
Welgedacht	Portion 81 & 82 of farm Welgedacht	1 Carnation Road Welgedacht AH, Springs	S 26°12'30" E 28°19'01"
Drainage District 5			
Carl Grundling	Portion 58 of farm Varkenfontein 169	Vorsterkroon, Nigel	S 26°12'30" E 28°19'01"
Herbert Bickley	Portion 13 of farm Maraisdrift 190	Heidelberg Road, Maraisdrift, Nigel	S 26°12'30" E 28°19'01"
Heidelberg	Portion 28 of farm Boschhoek 385	Vaaldam Road, Heidelberg	S 25°57'43" E 28°12'49"
Ratanda	Nooitegedacht 390	Vaaldam Road, Ratanda	S 26°12'30" E 28°19'01"
Tsakani	Portion 22 of farm Vlakfontein 161	Cnr Modjadji and khama Streets	S 26°12'30" E 28°19'01"

Drainage District 6			
Dekema	Portion 10 of Katlehong 151	Brickfield Road, Motsamai Section	S 26°12'30" E 28°19'01"
Rondebult	Remaining Portion 27 Rondebeult 136	Cnr Kalk/ Van dyk Road, Rondebult	S 26°12'30" E 28°19'01"
Vlakplaats	Portion 191 farm of Vlakplaats 138	Cnr Brickfield / Bierman Street, Vosloorus	S 26°12'30" E 28°19'01"
Waterval	Portion 50,62,12 and 1 of farm Waterval 150 and Remaining portion 3 of the farm Witkop	Waterfal Farm, Meadow Road, kliprivier	S 26°12'30" E 28°19'01"

C3.1.5 Datasheet: This is the minimum specifications ERWAT will consider: Bidders are required to submit datasheets and manufactures brochures that are linked to the completed datasheet. Failure to complete the datasheet in full and requirements above (Manufacturer's Brochures) will lead to disqualification. ERWAT reserves the right to verify submitted information. **In the event that the information completed by the bidder below differs from the brochure submitted, the brochure will take precedence and will be used to verify compliance to the mandatory requirements.**

CATEGORY A: SELF-PRIMING PUMPS			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1 SELF-PRIMING PUMP			
1	Pump Type	Self-Priming	
2	Manufacturer	……..	
3	Supplier	……..	
5	Suction diameter – (mm)	50 (2") – 250 (10")	
6	Discharge diameter – (mm)	50 (2") – 250 (10")	
7	Type of seal	(Mechanical Seal) Tungsten Titanium Carbide or equivalent	
8	Impeller	Hard Iron	
9	Casing	Cast Iron	
10	Shaft	Steel Alloy AISI/SAE 4150 or Equivalent	
11	Shaft Sleeve	Steel Alloy AISI/SAE 4130 or Equivalent	
12	Impeller Type	Semi-Open Type, Two Vanes	

CATEGORY B: SUBMERSIBLE PUMPS (Wet-Well Installation)			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1: SUBMERSIBLE PUMP			
1	Pump Type	Submersible	
2	Manufacturer (OEM)	……	
3	Supplier	……	
4	Ingress Protection Rating	IP68	
5	Pump Casing	Cast Iron	
6	Impeller	Grey Cast Iron	
1.1 kW, 220V (1ph), 2 - Pole Electric Motor Pump with Float Switch and Electrical Cord incl. a 3 – Pin Plug			
1	Model/Serial Number	……	
2	Duty Point	5l/s, 10m	
2 kW, 400V (3ph), 4 - Pole Electric Motor Pump			
1	Model/Serial Number	……	
2	Duty Point	21l/s, 6m	
2.4 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……	
2	Duty Point	11l/s, 12m	
3.1 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……	

2	Duty Point	26l/s, 8m	
4 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	13l/s, 7m	
4.2 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	16 l/s, 15m	
4.7 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	26l/s, 9m	
5.5 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	8l/s, 18m	
5.9 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	34l/s, 15m	
7.4 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	21l/s, 24m	
9 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	

2	Duty Point	36 l/s, 15m	
13.5 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	62 l/s, 14m	
15 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	26l/s, 31m	
22 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	82l/s, 18m	
37 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	250 l/s, 12m	
45 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	135 l/s, 23m	
47 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	49 l/s, 58m	
55 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	

2	Duty Point	310 l/s, 14m	
90 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	238 l/s, 30m	
105 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	115 l/s, 61m	
TYPE 2: SUBMERSIBLE PUMP			
1	Pump Type	Submersible	
2	Manufacturer	……..	
3	Supplier	……..	
4	Ingress Protection Rating	IP68	
5	Pump Casing	Cast Iron EN-GJL-250	
6	Impeller	Ductile Iron GGG60	
1.8 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	9l/s, 10m	
2.6 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	17l/s, 8m	
3 kW, 400V (3ph), 6- Pole Electric Motor Pump			

1	Model/Serial Number	……..	
2	Duty Point	18l/s, 13m	
3.5 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	15l/s, 13m	
3.6 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	30l/s, 8m	
4.8 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	22l/s, 15m	
5.5 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	20l/s, 16m	
7.5 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	23l/s, 20m	
11 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	44l/s, 23m	
15 kW, 400V (3ph), 6- Pole Electric Motor Pump			

1	Model/Serial Number	……..	
2	Duty Point	43l/s, 23m	
18.5 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	45l/s, 29m	
22 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	l/s, m	
30 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	55l/s, 35m	
37 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	60l/s, 41m	
50 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	60l/s, 43m	
60 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	95l/s, 44m	
70 kW, 400V (3ph), 6- Pole Electric Motor Pump			

1	Model/Serial Number	……..	
2	Duty Point	75l/s, 50m	
90 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	110l/s, 65m	
110 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	125l/s, 70m	

CATEGORY C: IMMERSIBLE PUMPS (Dry Installation)			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1: IMMERSIBLE PUMP			
1	Pump Type	Immersible	
2	Manufacturer	……..	
3	Supplier	……..	
4	Ingress Protection Rating	IP68	
5	Pump Casing	Cast Iron	
6	Impeller	Grey Cast Iron	
1.1 kW, 220V (1ph), 2 - Pole Electric Motor Pump with Float Switch and Electrical Cord incl. a 3 – Pin Plug			
1	Model/Serial Number	……..	
2	Duty Point	5l/s, 10m	
2 kW, 400V (3ph), 4 - Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	21 l/s, 6m	
2.4 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	11 l/s, 12m	
3.1 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	26 l/s, 8m	

4 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	13 l/s, 7m	
4.2 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	16 l/s, 15m	
4.7 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	26 l/s, 9m	
5.5 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	8.8 l/s, 18m	
5.9 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	34 l/s, 15m	
7.4 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	21 l/s, 24m	
9 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	36 l/s, 15m	

13.5 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	62 l/s, 14m	
15 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	26 l/s, 31m	
22 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	82 l/s, 18m	
37 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	250 l/s, 12m	
45 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	135 l/s, 23m	
47 kW, 400V (3ph), 2- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	49 l/s, 58m	
55 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	310 l/s, 14m	

90 kW, 400V (3ph), 6- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	238 l/s, 30m	
105 kW, 400V (3ph), 4- Pole Electric Motor Pump			
1	Model/Serial Number	……..	
2	Duty Point	115 l/s, 61m	

CATEGORY D: PROGRESSIVE CAVITY PUMPS			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
PROGRESSIVE CAVITY PUMPS			
1	Pump Type	Progressive Cavity Pump	
2	Manufacturer	……..	
3	Supplier	……..	
5	Casing(s)	Cast Iron	
6	Main Shaft	Stainless Steel	
7	Flex Shaft	Stainless Steel	
8	Stator	Nitrile	
9	Stator Housing	Thick Walled Steel Tubing	
10	Rotor	Carbon Steel	
11	Type of seal	Mechanical Seal	
12	Bearings	High Thrust Taper-Roller	

CATEGORY E: PROPELLER PUMPS (AXIAL FLOW TYPE)			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1: GEARED MOTOR DRIVEN PROPELLER PUMPS			
1	Pump Type	Propeller Pump	
2	Manufacturer	……	
3	Supplier	……	
4	Size Range	16 Inch, 24 Inch & 36 Inch	
5	Type of seal	Gland Packing	
6	Propeller	Cast Iron	
7	Casing	Cast Iron	
8	Shaft	Steel Alloy	
9	Propeller Type	Opened or Closed	
FLOW CHARACTERISTICS			
10	16 Inch Axial Flow Pump	N = 1475rpm, Q_{BEP} = 296,7 l/s H_{BEP} = 26.9m	
11	24 Inch Axial Flow Pump	N = 977rpm, Q_{BEP} = 826.3 l/s H_{BEP} = 28.2m	
12	36 Inch Axial Flow Pump	N = 586rpm, Q_{BEP} = 1755 l/s H_{BEP} = 21.3m	
TYPE 1: SUBMERSIBLE PROPELLER PUMP			
1	Pump Type	Submersible Propeller Pump	
2	Manufacturer	……	
3	Supplier	……	
4	Type of seal	Mechanical Seal (Corrosion Resistant Tungsten Carbide)	

5	Propeller	Stainless Steel	
6	Casing	Cast Iron	
7	Shaft	Stainless Steel (EN 1.4057 or AISI 431)	
8	Propeller Type	Semi Open Multi Vane, Back-Swept, Non-Clogging	
9	Ingress Protection Rating	IP68	
1.5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@1.5kW 8P 600 m^3/h, 0.48m	
2.5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@2.5kW 8P 860 m^3/h, 0.64m	
3.1 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@3.1kw 4P 135m^3/h, 4m	
3.5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@3.5kw 4P 135m^3/h, 4.2m	
5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@5kW 4P 161m^3/h, 4.3m	
5.5 kW Submersible Propeller Pump			

1	Model/Serial Number	……..	
2	Duty Point	@5.5kW 12P 2000m^3/h, 0.72m	
7.5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@7.5kw 4P 215m^3/h, 6.4m	
10 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@10kW 12P 2600m^3/h, 0.96m	
13 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@13kW 16P 3700m^3/h, 0.78m	
18.5 kW Submersible Propeller Pump			
1	Model/Serial Number	……..	
2	Duty Point	@18.5kW 16P 4200m^3/h, 0.90m	

CATEGORY F: END-SUCTION PUMPS			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1: BEARING FRAME PUMP			
1	Pump Type	Direct and/ or Long Coupled	
2	Manufacturer	……..	
3	Supplier	……..	
4	Pump Casing	Cast Iron EN-GJL-250	
5	Impeller	Ductile Iron GGG60	
100mm Suction, 80mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@2.2kW 16l/s, 5.5m	
100mm Suction, 100mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@3kW 22l/s, 7m	
150mm Suction, 150mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@9kW 55l/s, 10m	
150mm Suction, 125mm Discharge			
1	Model/Serial Number	……..	

2	Duty Point	@9kW 50l/s, 10m	
200mm Suction, 200mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@9kW 82l/s, 6m	
250mm Suction, 250mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@15kW 118l/s, 6m	
300mm Suction, 300mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@45kW 270l/s, 11m	
400mm Suction, 400mm Discharge			
1	Model/Serial Number	……..	
2	Duty Point	@90kW 530l/s, 12m	
TYPE 2: DRY-INSTALLED VOLUTE CASING PUMP			
1	Pump Type	Volute Casing	
2	Manufacturer	……..	
3	Supplier	……..	
4	Pump Casing	ERN Wear-Resistant Nickel-Alloyed Cast Iron	
5	Impeller	ERN Wear-Resistant Nickel-Alloyed Cast Iron	
65mm Suction, 50mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	

2	Duty Point	@3kW 2P 7.3l/s, 13.6m	
80mm Suction, 50mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@15kW 2P 16.5/s, 35.5m	
80mm Suction, 65mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@15kW 2P 21.2l/s, 26.5m	
100mm Suction, 80mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@9kW 2P 13.6l/s, 26.4m	
125mm Suction, 80mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@22kW 2P 32l/s, 35m	
125mm Suction, 100mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@5.5kW 4P 17l/s, 7m	
150mm Suction, 125mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@132kW 4P 100l/s, 42m	
150mm Suction, 100mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	

2	Duty Point	@45kW 4P 28l/s, 45m	
150mm Suction, 150mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@30kW 6P 90l/s, 9m	
200mm Suction, 200mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@90kW 4P 190l/s, 29m	
250mm Suction, 250mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@150kW 4P 280l/s, 38m	
300mm Suction, 300mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@132kW 4P 390l/s, 26m	
350mm Suction, 350mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@175kW 6P 610l/s, 22m	
400mm Suction, 350mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	
2	Duty Point	@132kW 6P 430l/s, 20m	
400mm Suction, 400mm Discharge PN10, Dry-Installed Volute Casing Pump			
1	Model/Serial Number	……..	

2	Duty Point	@175kW 6P 780l/s, 18m	
TYPE 3: BARE-SHAFT PUMP			
1	Pump Type	Bare Shaft	
2	Manufacturer	……..	
3	Supplier	……..	
4	Pump Casing	Cast Iron EN-GJL-250	
5	Impeller	Cast Iron EN-GJL-200	
65mm Suction, 50mm Discharge PN16, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@11kW 4P 13.89l/s, 36m	
80mm Suction, 65mm Discharge PN16, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@110kW 6P 53.4l/s, 123.3m	
100mm Suction, 80mm Discharge PN16, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@45kW 4P 47.9l/s, 56.8m	
125mm Suction, 100mm Discharge PN16, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@45kW 4P 57.4l/s, 48m	
150mm Suction, 125mm Discharge PN16, Bare – Shaft Pump			
1	Model/Serial Number	……..	

2	Duty Point	@160kW 4P 92.7l/s, 90.5m	
200mm Suction, 150mm Discharge PN10, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@200kW 4P 141.7l/s, 88.9m	
250mm Suction, 200mm Discharge PN10, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@75kW 4P 123.9l/s, 41.3m	
300mm Suction, 250mm Discharge PN10, Bare – Shaft Pump			
1	Model/Serial Number	……..	
2	Duty Point	@250kW 4P 253.6l/s, 66.3m	

CATEGORY G: SUBMERSIBLE MIXERS			
Item No.	**Item Description**	**Specified: Engineer**	**Offered: Contractor**
SUBMERSIBLE MIXERS			
1	Mixer Type	Submersible(Horizontal)	
2	Manufacturer	……	
3	Supplier	……	
4	Type of seal	Silicon Carbide (RSiC)	
5	Mixer Propeller	High Chromium Cast Iron	
6	Casing	Cast Iron	
7	Shaft	Stainless Steel (EN 1.4057 or AISI 431)	
8	Propeller Type	Double-Curved Propeller	
9	Ingress Protection Rating	IP68	

CATEGORY H: MOBILE DIESEL PUMPS			
Item No.	**Item Description:**	**Specified: Engineer**	**Offered: Contractor**
TYPE 1: Mobile Diesel Pump			
1.	Name, Model number and ID as per product data sheet/brochure	……	
2.	Pump must be 150mm ported prime and re-prime (vacuum assisted) vortex pump capable of large solids handling and dry running	• Suction and discharge 150 mm • Vacuum assisted Self-Priming	
3	Solids handling	50 - 100 mm	
4.	Capacity discharge	295 - 350 m³/h	
5.	Discharge head	20 - 30 m	
6.	Pump speed	1500 - 1600 rpm	
Diesel Engine			
7.	Type of drive	Direct drive	
8.	Cylinders	4 Cylinders	
9.	Engine	54kW @ 2500 rpm	
10.	Fuel capacity	Min 160 litre tank.	
TYPE 2: Mobile Diesel Pump			
11.	Name, Model number and ID as per product data sheet/brochure	……	
12.	Pump must be high quality centrifugal screw impeller pump capable of large solids handling and dry running	• Suction PN10 DN250 and discharge PN10 DN150 • Vacuum assisted Self-Priming	
13.	Solids handling	75 mm	
14.	Capacity discharge	295 - 457 m³/h	

15.	Discharge head	26 - 62 m	
16.	Pump speed	1200 - 1850 rpm	
Diesel Engine			
17.	Type of drive	Direct drive	
18.	Cylinders	4 Cylinders	
19.	Engine	55.4kW @ 1850 rpm	
20.	Fuel capacity	Min 400 litre tank.	
TYPE 3: Mobile Diesel Pump			
21.	Name, Model number and ID as per product data sheet/brochure	……	
22.	Pump must be high quality Dri-Prime pump capable of large solids handling and dry running	• Suction and discharge 150 mm • Vacuum assisted Self-Priming	
23.	Solids handling	115 mm	
24.	Capacity discharge	403 m^3/h	
25.	Discharge head	58 m	
26.	Pump speed	2000 rpm	
Diesel Engine			
27.	Type of drive	Direct drive	
28.	Cylinders	4 Cylinders	
29.	Engine	54.7kW @ 2000 rpm	
30.	Fuel capacity	Min 330 litre tank.	

C3.2 ENGINEERING

C3.2.1 Drawings

C3.2.1.1 Contractors Drawings

The contractor appointed to carry out the work shall produce a comprehensive set of detailed design drawings suitable for issue for construction as well as detailed shop drawings, prior to manufacture of equipment. They shall also be responsible for As-Built drawings and operating and maintenance manuals on completion.

The following electrical drawings shall be provided:

- Generator GA Drawing
- Detailed cable layout routes
- Wiring and Termination schedules as required for construction
- Equipment schedules
- Equipment Data Sheets

C3.3 CONSTRUCTION

C3.3.1 Standards

It shall be the responsibility of the Contractor to obtain, at his own expense, the most recent copies of the relevant editions of the documents referred to.

The Contractor shall keep copies of the Standard Specifications, copies which are available from the South African Bureau of Standards.

For the purpose of this Contract the following Standard Specifications shall apply to all items supplied and does not form part of the evaluation process:

C3.3.1.1 *Electrical Standards and specifications*

All material and equipment shall comply with recognized national and international standard specifications.

Typically the following standards shall apply:

• Transformers	SANS 780
• Mini Subs	SANS 1029 and SANS 1030
• Low voltage MCCs	SANS 60439
• Low voltage cable	SANS 1507
• Luminaires	SANS 1279 & SANS 60598
• Earthing and lightning protection	SANS 10313 & 61024

- Regulations for the wiring of premises SANS 10142 -1 (2003)

In addition there shall be compliance with:

- The Occupational Health and Safety Act
- Regulations of the Supply Authority
- Local Authority by-laws
- Regulations of the Fire office
- Telecommunications legislation

C3.3.2 Site establishment

C3.3.2.1 *Services and Facilities provided by the Employer.*

1. Electricity Supply

The Site is provided with ESKOM/Municipality power. One or more 380 V 50 Hz power supply points can be made available to the Contractor. The contractor shall be responsible for providing an installation which complies in all respects with the standing regulations of the supply authority. Failure on the part of the Contractor to observe these requirements or maintain his installations in terms therefore will result in the termination of electrical power supplies until such time as any shortcomings in this regard are rectified.

No warranty is offered or given by the Employer that the existing available electricity supply will be adequate for the Contractor's purposes nor that such supply is in any way guaranteed.

2. Telephone Services

To be provided by Contractor

3. Area for Contractor's Site Establishment

The proposed site of the Contractor's offices, workshops, stores and plant yard will be indicated on site if requested where applicable.

C3.3.2.2 *Facilities provided by the Contractor*

The Contractor is required to provide a construction camp including offices, workshop, materials, store, sanitary facilities, offices and equipment for his own use as required.

C3.3.3 Site Usage

The Contractor; his personnel; and his subcontractors; and suppliers; shall confine their activities to the demarcated site of the Works and the direct access roads thereto. Temporary routes shall be subject to the written approval of the Engineer and be subject to the applicable Standardized Specifications.

C3.4 MANAGEMENT OF THE WORKS

C3.4.1 Planning and Programming

The programme referred to in the General Conditions of Contract shall be a network- based programme in accordance with the precedence method; a detailed cash flow graph indicating projected monthly invoice amounts shall also be provided. The critical path of the programme of work shall be clearly indicated and the programme monitored continually and updated monthly by the Contractor in accordance with his progress.

(1) In compiling the programme of work, the Contractor shall incorporate the following important specific requirements and constraints:

(a) The identification and marking of affected services prior to commencing construction works.

(b) The requirements of the Environmental Management Plan (EMP) as specified in the relevant sections of the Particular Specifications and the requirements in respect of inspections and community liaison.

(c) The requirements of the Occupational Health Safety (OHS) Act of 1993 and the Construction Regulations, 2003.

(d) The relocation of services.

(e) An allowance to accommodate "normal" rain days.

(2) The programme submitted shall include at least the following details:

(a) A work breakdown structure identifying the major activity groups.

(b) The critical path shall be indicated and floats on non-critical activities shall be shown.

(c) The working hours per day, week and month allowed for in the programme with details of resource allocations per activity.

(d) Production rates for key activities, e.g. engineering, fabrication, delivery, installation, commissioning, etc.

(3) In addition the Contractor shall submit to the Engineer at monthly intervals a progress report indicating the following details:

(a) Work completed in previous month and total progress to date, per activity.

(b) Activities behind programme, for which the Contractor shall detail all reasons for such delays as well as the measures to be implemented to make up delays.

(c) A GANTT chart showing the original programme, the latest approved version of the programme, actual progress achieved and revised completion sates, if and when applicable.

- Failure to comply with all of the foregoing requirements shall entitle the Engineer to use a programme based on his own assumptions to evaluate claims for extension of time for completion of the works, or for additional compensation.

ERW202109/TNDR-003: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS3.5 HEALTH AND SAFETY SPECIFICATIONS

CONTENTS

C3.5. INTRODUCTION AND BACKGROUND

C3.5.1.1 BACKGROUND TO THE HEALTH AND SAFETY SPECIFICATION

The Construction Regulations (July 2003) place the onus on the Client to prepare a preconstruction Health and Safety specification, highlighting all risks not successfully eliminated during design setting standards for Health and Safety during construction phase.

C3.5.1.2 PURPOSE OF THE HEALTH AND SAFETY SPECIFICATION

To assist in achieving compliance with the Occupational Health and Safety Act 85/1993 and the promulgated Construction Regulations (July 2003) in order to reduce incidents and injuries. These specifications shall act as the basis for the drafting of the construction phase Health and Safety plan by the Contractor.

The specification sets out the requirements to be followed by the Principal Contractor and their Contractors so that the Health and Safety of all persons potentially at risk may receive the same priority as other facets of the project e.g. Cost, programmed, environment, quality etc.

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C3.5.2 HEALTH AND SAFETY SPECIFICATION

C3.5.2.1 SCOPE

This specification covers the requirements for eliminating and mitigating incidents and injuries on the **ERW202109/TNDR-003: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS Project.**

The scope also addresses legal compliance, hazard identification and risk assessment, risk control and promoting a Health and Safety culture amongst those working on the project. The specification also makes provision for the protection of those persons other than employees.

C3.5.2.1.2 Provision for Health & Safety Cost

The Principal Contractor must make provision for the cost of Health & Safety Measures during the construction process as required by the Construction Regulation 4(h).

C3.5.2.2 INTERPRETATIONS

C3.5.2.2.1 APPLICATION

This specification is a compliance document drawn up in terms of the South African legislation and is therefore binding. It must be read in conjunction with relevant legislation as noted previously.

C3.5.2.2.2 DEFINITIONS

The definitions as listed in the Occupational Health and Safety Act 85/1993 and Construction Regulations (July 2003) shall apply.

C3.5.2.3 MINIMUM ADMINISTRATIVE REQUIREMENTS

C3.5.2.3.1 NOTIFICATION OF INTENTION TO COMMENCE CONSTRUCTION WORK

The Principal Contractor shall notify the provincial Director of the Department of Labour in writing that construction work commences.

C3.5.2.3.2 ASSIGNMENT OF CONTRACTOR'S RESPONSIBLE PERSONS TO SUPERVISE HEALTH AND SAFETY ON SITE

The Principal Contractor shall submit supervisory appointments as well as any relevant Appointments in writing (as stipulated by the OHSA and Construction Regulations), prior to commencement of work. Proof of competency must be included. See annexure B.

C3.5.2.3.3 COMPETENCY FOR CONTRACTOR'S APPOINTED COMPETENT PERSON

The Principal Contractors' competent persons for the various risk management portfolios shall fulfil the criteria as stipulated under the definition of Competent in accordance with the

Construction Regulations (July 2003). Proof of competence for the various appointments must be included.

C3.4.5.3.4 COMPENSATION OF OCCUPATIONAL INJURIES AND DISEASES ACT 130 OF 1993 (COIDA)

The Principal Contractor shall submit a letter of good standing from their Compensation Insurer-FEM or Compensation Commissioner to the Client's Representative as proof of registration. Contractors shall submit proof of registration to their Contractor before they commence work on site.

C3.5.2.3.5 OCCUPATIONAL HEALTH AND SAFETY POLICY

The Contractor and their Contractors shall submit a Health and Safety policy signed by their Chief Executive Officer. The Policy must outline objectives and how they will be achieved and implemented by the Company / Contractor.

C3.5.2.3.6 HEALTH AND SAFETY ORGANOGRAM

The Principal Contractor and their Contractors shall submit an organogram, outlining the Health and Safety site Management Structure including the relevant appointments / competent persons. In cases where appointments have not been made, the organogram shall reflect the intended positions. The organogram shall be updated when there are any changes in the site Management Structure.

C3.5.2.3.7 PRELIMINARY HAZARD IDENTIFICATION AND RISK ASSESSMENT AND PROGRESS HAZARD IDENTIFICATION AND RISK ASSESSMENT

- Roof Work
- Mobile Cranes Management System
- Mechanical
- Working at heights, as per CR8 – Fall Protection Plan, Scaffolding Management
  - Person falling
  - Material falling
  - Protection of decking edges, finished floor slab edges, stairways, floor penetrations, lift shafts, any other openings and areas from where persons may fall.
- Excavations
  - Collapse of Walls
  - People/Equipment falling in Excavations
  - Shoring
  - Underground services
  - Drainage
  - Pipe-Jacking operations
- Confined Space entry
- Formwork and Support Work
  - Casting of Concrete
- Manual and Mechanical Handling o Lifting and

placement of pipes o Overhead works
- Noise Control
- Dust Control

Principal Contractor to ensure that these risk assessments as well as other risks identified by them are updated monthly or as the risk change and communicated to all relevant parties. CR 7(4)

C3.5.2.3.8 HEALTH AND SAFETY REPRESENTATIVE(S)

The Principal Contractor and their Contractors shall ensure that Health and Safety Representative(s) are appointed under consultation and trained to carry out their functions. The appointment must be in writing.

The Health and Safety Representative shall carry out regular inspections, keep records and report all findings to the Responsible Person forthwith and at Health and Safety meetings

C3.5.2.3.9 HEALTH AND SAFETY COMMITTEES

Principal Contractor shall organize monthly Health & Safety meetings. Minutes and records shall be kept. Principal Contractors Health & Safety representative and responsible person shall attend this meeting.

C3.5.2.3.10 HEALTH AND SAFETY TRAINING

C3.5.2.3.10.1 Induction

Principal Contractor shall ensure that all undergo site-specific induction presented by a competent person and proof of it too.

C3.5.2.3.10.2 Awareness

The Principal Contractor shall ensure that, on site, periodic toolbox talks take place at **least once per week**. These talks should deal with risks relevant to the construction work at hand. A record of attendance shall be kept in the Health and Safety file. All Principal Contractor have to comply with this minimum requirement.

C3.5.2.3.10.3 Competency

All competent persons shall have the knowledge, experience, training and qualifications specific to the work they have been appointed to supervise, control, and carry out. This will have to be assessed on a regular basis e.g.

Periodic audits by the Client's Health & Safety Agent, progress meetings, etc. The Contractor is responsible to ensure that competent Contractors are appointed to carry out construction work.

C3.5.2.3.11 GENERAL RECORD KEEPING

The Principal Contractor and their Contractors shall keep and maintain Health and Safety records to demonstrate compliance with this Specification, with the OHS Act 85/1993, and with the Construction Regulations (July 2003). The Principal Contractor shall ensure that all records of incidents / accidents, emergency procedures training, inspections, audits, etc. are kept in a Health and Safety file held in the site office. The Principal Contractor must ensure that every sub-Contractor keeps its own Health and Safety file, maintains the file and make it available on request (The file must include the Sub-Contractor's health and safety plan). These records are crucial for inclusion in the Principal Contractors' consolidated health and safety file for handover to the Client on completion of construction work.

C3.5.2.3.12 HEALTH AND SAFETY AUDITS, MONITORING AND REPORTING

The Client's Health & Safety Agent shall conduct monthly Health and Safety audits of the work. Operations including a full audit of physical site activities as well as an audit of the administration Health and Safety. *The Principal Contractor is obligated to conduct similar audits on their Contractors.*

Detailed reports of the audit findings and results shall be reported on at all levels of project management meetings / forums. Copies of the Client audit reports shall be kept in the Primary Project Health and Safety file while the Principal Contractor audit reports shall be kept in their file, a copy being forwarded to the Client. Principal Contractor has to audit their Contractors and keep records of these audits in their Health and Safety files, available on request.

C3.5.2.3.13 EMERGENCY PROCEDURES

The Principal Contractor shall compile a comprehensive Evacuation Plan with assemble point and contact details in the case of any emergency supplied by the Client's Health & Safety Agent.

C3.5.2.3.14 FIRST AID BOXES AND FIRST AID EQUIPMENT

The Principal Contractor and their Contractors shall appoint in writing First Aider(s). The appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. All Principal Contractor with more than 5 employees shall supply their own first aid box. Principal Contractor with more than 10 employees shall have trained, certified first aider on site at all times & First aid Box adequately stocked at all times.

C3.5.2.3.15 ACCIDENT / INCIDENT REPORTING AND INVESTIGATION

Injuries are to be categorized into first aid, medical, disabling and fatal. The Principal Contractor must stipulate in its construction phase Health and Safety plan how it will handle each of these categories. When reporting injuries to the Client, these categories shall be used. All contractors must investigate and report on the 4 categories of injuries to the Principal Contractor at least monthly. Contractors must investigate injuries and accidents involving their employees within seven days of the incident in the form on Annexure1 (General Administrative Regulations) and forward a copy on the investigation report to the principal contractor forthwith. **All incidents reportable in terms of the provision of Section 24 of the OHS Act 1993 must be reported**

to the local Dept. of Labour in the prescribed manner.

The Principal Contractor must report all injuries to the Client in the form of a spreadsheet, which includes all contractor injuries/incidents and man-hours worked for the month as well as the cumulative total. This report must be done on a monthly basis and must form part of the Principal Contractor's progress report.

C3.5.2.3.16 HAZARDS AND POTENTIAL SITUATIONS

The Principal Contractor shall immediately notify the Client's Health & Safety Agent of any hazardous or potentially hazardous situations that may arise during the performance of construction activities.

C3.5.2.3.17 PERSONAL PROTECTIVE EQUIPMENT (PPE) AND CLOTHING

The Principal Contractor shall ensure that all workers are issued and wear hard hats, protective footwear and overalls. The Principal Contractor and their Contractors shall make provision and keep adequate quantities of SABS or SANS approved PPE on site at all times.

C3.5.2.3.18 OCCUPATIONAL HEALTH AND SAFETY SIGNAGE

The Principal Contractor shall provide adequate on-site OHS signage. Including but not limited to: "no unauthorized entry", "report to site office", "site office", and "hardhat area". Signage shall be posted up at all entrances to site as well as on site in strategic locations e.g. Access routes, entrances to structures and buildings, scaffolding and other potential risk areas / operations. All Contractors to adhere to it.

C3.5.2.3.19 CONTRACTORS

The Principal Contractor shall ensure that all Contractors appointed by them comply with this Specification, the OHS Act 85/1993, and Construction Regulation (July 2003).

The Principal Contractor may only appoint a sub-contractor after approving the sub-contractor's health & safety plan. The Principal Contractor must audit each of its Contractors on a monthly basis, with audit reports filed in the health & safety file on site. The audit must include an administrative assessment as well as a physical inspection of the contractor's health & safety system.

The Principal Contractor must stop any Contractor from carrying out construction work that is not in accordance with the Principal Contractor's or Contractor's health & safety plan or if there is an immediate threat to the health and safety of persons.

The Principal contractor shall take all reasonable steps necessary to ensure co- operation between all Contractors to enable each of those Contractors to comply with the provisions of these regulations;

The Principal Contractor must ensure that their Contractor is registered and in good standing

with a recognized compensation fund or with a licensed compensation insurer prior to work commencing on site;

The Principal Contractor must ensure that potential Contractors submitting tenders have made provision for the cost of health and safety measures during the construction process; The Principal Contractor shall discuss and negotiate with their Contractor the contents of the health and safety Plan and shall finally approve that plan for implementation;

C3.5.2.3.20 PENALTIES

Penalties may be imposed for ongoing non-compliance to the provisions of the Client's Health and Safety specification and Principal Contractors' health & safety plans. The penalty procedure shall consist of a written warning with a compliance time frame. **Failure to comply within the time frame stipulated would result in a R1000 penalty per non-compliance item per day that the non- compliance persists.**

C3.5.2.3.21 A HEALTH AND SAFETY OFFICER CR 6.6

The Principal Contractor shall provide a full-time safety officer on site and proof of their competency to be attached to their appointment.

C3.5.2.4 PHYSICAL REQUIREMENTS

C3.5.2.4.1 CIVIL WORK

Principal Contractor to ensure that the Contractor complies with Construction regulation 21 and that the following is undertaken during civil work:

- A competent site supervisor to be on site at all times.
- Plant and equipment inspected daily and registers kept.
- All operators of plant and vehicles: trained, competent and physically and psychologically fit. Certificates to be put in their Health & Safety File.
- Workers that are working close to the traffic to be visible and are to wear reflective vests.
- Adequate safety signage to be posted ahead of any work area in the road.
- All signage, including delineators to be maintained and kept clean at all times.
- The required PPE must be worn at all times (Hard hats, safety shoes, overalls, etc.)
- Risk assessments to be conducted on all high-risk activities.
- Speed reduction road signs to be posted.
- Dust control practices used to limit dust generation.

Laying of pipes / Backfilling

- A competent site person to supervise lifting operations at all times.
- No employee to stand under any suspended loads.
- Loads must not be slewed over personnel, plant, site huts or property.
- All lifting equipment and accessories must be marked with the Safe Working Load.
- Slings must not be placed on sharp edges.

- Workers to wear proper PPE at all times.
- Work to be stopped when weather conditions prevent safe operations during trenching work or lying of pipes.
- Everyone to stand clear of any area being backfilled by mobile plant.

C3.5.2.4.2 EXCAVATIONS, SHORING, DEWATERING OR DRAINAGE

The Principal Contractor and any relevant Contractors shall make provision at tendering stage for shoring, dewatering or drainage of any excavations as per this specification.

The Principal Contractor shall make sure that:

- The excavations are inspected before every shift, after any blasting, after an unexpected fall of ground, after any substantial damage to the shoring and after rain, records kept thereof.

- Safe work procedures have been communicated to the workers,

- The safe work procedures are enforced and maintained by the Contractor's Responsible Persons at all times,

- The requirements as per section 11 of the Construction Regulations are adhered to.
- Where pipe-jacking activities are taking place safe work procedures/method statements to be submitted to Client's Health & Safety Agent prior to these activities.

Method statement to be developed where shoring will be done, especially near public roads and also where explosives will be / are used.

C3.5.2.4.3 CONFINED SPACE ENTRY

The Principal Contractor to prepare a confined space procedure in line with General Safety Regulation (5) OHSA Act

C3.5.2.4.4 EXISTING STRUCTURES

Any adjacent structures that may be affected by work must be considered in the planning process. Precautionary measures must be detailed and applied to prevent damage, uncontrolled collapse of existing structures and/or loss to property and persons during the entire construction phase.

C3.5.2.4.5 EDGE PROTECTION AND PENETRATIONS

The Principal Contractor must ensure that all exposed edges and openings are guarded and demarcated at all times until permanent protection has been erected. The Principal Contractors' risk assessment must include these items finished floor slab edges, floor penetrations, and all other openings and areas where a person may fall.

C3.5.2.4.6 HAZARDOUS CHEMICAL SUBSTANCES (HCS)

The Principal Contractor working with Hazardous chemical substances to obtain copies of all the (MSDS) Material Safety Data Sheets and this is to be kept on site and a copy to be forwarded to Client's Health & Safety Agent.

C3.5.2.4.7 STACKING OF MATERIALS

The Principal Contractor shall ensure that there are sufficient appointed stacking supervisors and that all materials and equipment is stacked and stored safely. Double handling of material should be avoided and for this purpose, pallets and other stacking options should be used.

C3.5.2.5 PLANT AND MACHINERY

C3.5.2.5.1 CONSTRUCTION PLANT

The Principal Contractor shall ensure that all such plant complies with the Requirements of the OHS Act 85/1993 and Construction Regulations (July 2003). The Principal Contractor shall inspect and keep records of inspections of construction plants used on site. Only authorized / competent persons are to use machinery under proper supervision. Appropriate PPE must be provided and maintained at all times.

C3.5.2.5.2 VESSELS UNDER PRESSURE (VUP) AND GAS BOTTLES

The Principal Contractor shall comply with the Vessels under Pressure Regulations, including:

Providing competency and awareness training to the operators, Providing PPE, Inspect Equipment regularly and keep record of inspections, Provide appropriate firefighting equipment (Fire Extinguishers) on hand.

C3.5.2.5.3 FIRE EXTINGUISHERS AND FIRE FIGHTING EQUIPMENT

The Principal Contractor shall provide adequate, regularly serviced firefighting equipment located at strategic points on site, specific to the classes of fire likely to occur. The appropriate notices and signs must be posted as required.

C3.5.2.5.4 HIRED PLANT AND MACHINERY

The Principal Contractor shall ensure that any hired plant and machinery used on site is safe for use. The necessary requirements as stipulated by the OHS Act 85/1993 and Construction Regulations (July 2003) shall apply. The Contractor shall ensure that operators hired with machinery are competent and that certificates are kept on site in the Health and Safety file. All relevant Contractors must ensure the same.

C3.5.2.5.5FORMWORK AND SUPPORT WORK FOR STRUCTURES

The Principal Contractor shall ensure that the provisions of section 10 of Construction Regulations (July 2003) are adhered to. These provisions must include but not be limited to ensuring that all equipment used is examined for suitability before use, that all formwork and

support work is inspected by a competent person immediately before, during and after placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work has been removed. Records of all inspections must be kept in a register on site.

C3.5.2.5.6 GENERAL MACHINERY

The Principal Contractor shall ensure compliance with the Driven Machinery Regulations, which include inspecting machinery regularly, appointing a competent person to inspect and ensure maintenance, issuing PPE, and training those who operate the machinery.

C3.5.2.5.7 HIGH VOLTAGE & ELECTRICAL INSTALLATIONS

If high voltage electrical lines are present on the site perimeter, the Contractor must be aware of the location of them and are to demarcate its positions.

These demarcations must be maintained throughout the duration of the construction work. The minimum safety clearances as per Electrical Machinery Regulation 15 must be adhered to**. All installation must comply with SANS 10142 & the regulations of the OHS Act 85/1993 and Construction Regulation 22.**

All temporary electrical installations must be inspected at least weekly.

C3.5.2.5.8 PORTABLE ELECTRICAL TOOLS AND EXPLOSIVE POWERED TOOLS

The Principal Contractor shall ensure that use and storage of all explosive powered tools and portable electrical tools are in compliance with relevant legislation.

The Contractor shall ensure that all electrical tools, electrical distribution boards, extension leads, and plugs are kept in safe working order. Regular inspections and toolbox talks must be conducted to make workers aware of the dangers and the control measures that are to be implemented e.g. Personal protection equipment, guards, etc.

A competent person to undertake routine inspections and records are to be kept on file. Only authorized trained persons are to use the tools, the safe work procedures to apply. Awareness training to be carried out, compliance enforced at all times, and PPE are provided and maintained,

C3.5.2.5.9 WELDING EQUIPMENT

- Only authorised / trained persons to use the equipment.
- The operators are to wear correct PPE - eye/ face/foot/body/respirator.
- Flashback arrestors are to be fitted on cylinders and gauges when using gas welding equipment. Fire prevention methods to be applied.
- Where electric arc welders are used, equipment only to be used in a dry area, protected from wetness.

C3.5.2.5.10 PUBLIC AND SITE VISITOR HEALTH AND SAFETY

Both the Client and the Principal Contractor have a duty in terms of the OHS Act 85/1993 to do all that is reasonably practicable to prevent members of the public and site visitors from being affected by the construction activities. Site visitors must be briefed on the hazards and risks they may be exposed to and what measures are in place or should be taken to control these hazards and risks. A record of these inductions must be kept on site in accordance with the Construction Regulations. Principal Contractor to ensure that no unauthorized personal enter the construction area.

Method statements are to be drafted on traffic management on site, including work near the public.

C3.5.2.5.11NIGHT WORK

Adequate lighting to be provided where required. Personnel should not work alone at night.

C3.5.2.6 OCCUPATIONAL HEALTH

C3.5.2.6.1 OCCUPATIONAL HYGIENE

Exposure of workers to occupational health hazards and risks is very common in any work environment, especially in construction. Occupational exposure is a major problem and Principal Contractor must ensure that proper health and hygiene measures are put in place to prevent exposure to these hazards.
The Risk to be looked at includes:

<u>Ventilation</u>
Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.

<u>Noise</u>
Tasks identified where noise exceeds 85 dBa. All reasonable steps are to be taken to reduce noise levels. Hearing protection is to be used where noise levels cannot be reduced to below 85 dBa.

<u>Dust</u>
Principal Contractor to ensure that employees working with grinders, saws & jackhammers, etc. are issued with dust masks and dust exposure to be minimized at all times.

C3.5.2.6.2 WELFARE FACILITIES

The Principal Contractor will provide ablution facilities for all on site, including changing facilities & hand washing facilities. Safe and adequate facilities will be provided. Waste bins must be strategically placed and emptied regularly. Safe and clean storage areas must be provided for workers to store personal belongings and personal protective equipment.

C3.5.2.6.3 ALCOHOL AND OTHER DRUGS

The Principal Contractor is to ensure that no alcohol and other drugs are allowed on site. No person may be under the influence of alcohol or any other drugs while on the construction site. Any person on prescription drugs must inform his/her superior, who shall in turn report this to the Contractor forthwith. Any person suffering from any illness / condition that may have a negative effect on his/her safety performance must report this to his/her superior, who shall in turn report this to the Principal Contractor forthwith.

Any person suspected of being under the influence of alcohol or other drugs must be sent home immediately, to report back the next day for a preliminary inquiry. The Contractor concerned must follow a full disciplinary procedure and a copy of the disciplinary action must be forwarded to the Principal Contractor for his records.

HEALTH AND SAFETY SPECIFICATIONS (HSS)

PROJECT: ERW202109/TNDR-003: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

Annexure A

The Principal Contractor must submit compliance with Annexure A within **one week** of receiving this Specification.

HSS Item no.	REQUIREMENT	OHSA REQUIREMENT	SUBMISSION DATE
2.3.1	Assignment of Responsible Persons to supervise Construction work	OHS Act (section 16.2) & Construction Regulation 6	Before commencement on site
2.3.2	Competence of Responsible Persons	OHS Act (section 16.2) & Construction Regulation 6	Together with H & S plan
2.3.3	Compensation of Occupational Injuries and Diseases - Proof of Registration- FEM or CC	COIDA	Together with H & S plan
2.3.4	Occupational Health and Safety Policy	OHS Act	Together with H & S plan
2.3.5	Health and Safety Organogram	Client Requirement	Together with H & S plan
2.3.6	Initial Hazard Identification and Risk Assessment based on the Client/s assessment	Construction Regulations.	Together with H & S plan
2.3.7	Health and Safety Representative	OHS Act	Submit as soon as There are more than 20 employees on site

HEALTH AND SAFETY SPECIFICATIONS (HSS)

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Annexure B

The Principal Contractor shall make the following appointments according to the initial risk assessment: (further appointments could become necessary as the project progresses). Contractors shall make the relevant appointments as per their operations. The Client reserves the right to insist on any appointment as determined by its risk assessment of the Contractor concerned.

APPOINTMENT	OHSA REFERENCE	REQUIREMENT
CEO Assignee	Section 16(2)	A competent person to assume the overall H & S responsibility - Contractor's Responsible Person
Construction Work Supervisor	CR 6.1	A competent person to supervise and be responsible for Health and Safety related issues on site
Subordinate Construction Work Supervisors	CR 6.2	A competent person to assist with the daily supervision of construction / building work. The person(s) assist the Construction Work Supervisor
Health and Safety Representative(s)	Section 17	A competent person(s) to assist with identifying risks, attend H & S meetings, conduct inspections, assist with investigations, etc.
Incident Investigator	GAR 8	A competent person to investigate incidents / accidents on site, this could either be: * The 6.1 or 6.2 Person * H & S Representative * Member of the H & S Committee * H & S officer
Risk Assessment Co-ordinator	CR 7	A competent person to co-ordinate all assessments on behalf of the Principle Contractor. The same applies to Contractors.
Fall protection plan co-ordinator	CR 8	A competent person to prepare and amend the fall protection plan
First Aiders	GSR 3	A qualified person to address all on site first aid cases
Lifting machine and equipment Inspector	DMR 18	A competent person to inspect lifting machines and equipment
Lifting tackle Inspector	DMR 18	A competent person to inspect lifting tackles
Scaffolding Inspector	SANS 10085-1:2004	A competent person to inspect scaffolding before use and every time after bad weather, etc.
Scaffolding Erector	SANS 10085-1:2004	A competent person to erect scaffolding

APPOINTMENT	OHSA REFERENCE	REQUIREMENT
Scaffolding Supervisor	SANS 10085-1:2004	A competent person to supervise scaffolding
Stacking Supervisor	CR 26	A competent person to supervise all stacking and storage operations
Explosive powered tools Inspector / Supervisor	CR 19	A competent person to inspect and clean the tools daily and controlling all operations thereof
Temporary electrical installations Supervisor	CR 22	A competent person to control all temporary electrical installations
Fire-fighting equipment Inspector	CR 27	A competent person to inspect fire-fighting equipment

OTHER REQUIREMENTS

PROJECT: ERW202109/TNDR-003: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

Annexure C

The Principal Contractor shall comply but not be limited to the following requirements: Reports on these to the addressed to the Client at progress meetings or at least monthly whichever is sooner. A report with supporting documents shall be tabled at the Contractor/s monthly Health and Safety meeting.

WHAT	WHEN	OUTPUT	ACCEPTED BY CLIENT WITH DATE
Construction-phase Health and Safety plan	Within one weeks of receipt of the Spec.	Principal Contractor to report on status of Principal Contractors' Health and Safety plans	
Health and Safety file	Open file when construction begins and maintain throughout	Have file on hand at meetings	
Awareness Training (Tool Box Talks)	At least weekly	Attendance registers	
Health and Safety Reports	Monthly	Report covering: * Incidents/Accidents and Investigations * Non conformances by employees & contractor * Internal & External H & S audit reports	
Risk assessment	Updated and signed off at least monthly	Documented risk assessment	
Method statements (safe work procedures)	Drawn up before workers are exposed to new risks	Documented set of safe work procedures (method statements) updated and signed off	
General Inspections	Weekly and Daily	OHS Act compliance Registers: * Scaffolding * Excavations * Formwork & support work * Explosive tools * Temporary electrical Installations	
General Inspections	Monthly	* Fire-fighting equipment * Portable electrical equipment * Ladders	
General Inspections	3 - Monthly	* Lifting tackle * Oxy-acetylene cutting and welding sets * Fall prevention and arrest equipment	

General Inspections	6 - Monthly	* Lifting machines	
Workman's Compensation	Updated Weekly	Table list of Principal Contractors' workman's compensation proof of good standing	
Construction site rules & Section 37.2 Mandatory Agreement	Update Weekly	Table a report of all signed up Mandatory's	

PROJECT: ERW202109/TNDR-003: APPOINTMENT OF SERVICE PROVIDER/S FOR THE SUPPLY , DELIVER & INSTALLATION OF PUMPS AT ERWAT WASTEWATER CARE WORKS ON 'AS AND WHEN REQUIRED' BASIS FOR A PERIOD OF THIRTY-SIX (36 NO.) MONTHS

Annexure D

Acknowledgement of Receipt of the Health and Safety Specifications:

I,_____representing

_____Contractor

_____ _____

Have satisfied myself with the content of the construction Health and Safety Specification and shall ensure that the Contractor and its personnel comply with all obligations / requirements in respect thereof.

COMMENTS:

Contractor	*Witness 1*	*Witness 2*	*Employer*	*Witness 1*	*Witness 2*

C3.6 ENVIRONMENTAL MANAGEMENT DURING CONSTRUCTION

C3.6.1 INTRODUCTION

A comprehensive Environmental Scoping Report was prepared as part of the environmental and social assessment of the preceded project. Included in the report is an Environmental Management Plan (EMP) and the purpose of this Particular Specification is to make the Contractor aware of his obligations in terms of the EMP during construction and to afford him the opportunity to insert rates and prices in the Schedule of Quantities to cover these obligations.

Sub-Contractors and their employees must comply with all the requirements of this specification. Absence of specific reference to any sub-contractor in any specification does not imply that the sub-contractor is not bound by this specification.

The Contractor must arrange for all his employees and those of his sub- contractors to be informed of this specification before the commencement of construction to ensure:

a.) basic understanding of the key environmental features of the work site and environments, and

b.) familiarity with the requirements of this document.

C3.6.2 MONITORING AND ASSESSMENT OF COMPLIANCE

The environmental management performance of the Contractor (including his subcontractors and staff) will be reviewed on a regular basis by the Employer's ECO. The Contractor will be deemed not to have complied with the EMP if:

a.) There is evidence of negligence or recklessness resulting in the contravention of any of the clauses, both within and outside the boundaries of the construction site;

b.) The Contractor fails to comply with corrective or other instructions within a time specified by the Engineer;

c.) The Contractor fails to respond adequately in terms of the contract, to complaints from the public.

The Contractor will be given a period of 2 weeks after the commencement date of the contract, before compliance is enforced.

Via these environmental specifications the Contractor has been made aware of what actions are required of him and/or his subcontractors. Certain do's and don'ts have been given and onus for these controls rests with the Contractor as he is the only person capable of controlling these aspects and a fine/reward system will be implemented to encourage compliance.

Compliance to the EMP will be reported by the ECO in the form of a monthly Environmental

Compliance Report which will include all transgressions of the EMP and the environmental specification and rate them in order of significance. The Environmental Compliance Report will be forwarded to the Engineer, the Employer and GDACE on a monthly basis.

A percentage point will be given based on a questionnaire which is attached to the Report. Any percentage compliance above 80% will be considered to be within acceptable limits. If the Contractor has not complied with any of the clauses of the EMP, or the score in the monthly environmental audit drops to below 80% compliance, the ECO will advise the Engineer who shall order the Contractor in terms of the contract to remedy the deficiencies. Failure on the part of the Contractor to carry out such order shall be dealt with in terms of the contract.

Should compliance drop below 60% the ECO shall immediately advise the Engineer who shall have the right in terms of the contract to order in writing the suspension of the Works.

C3.6.3 COMPLIANCE WITH SANS 1200

All environmental clauses stated in the SANS 1200 "Standard Specification for Civil Engineering Construction" as amended in this document shall be adhered to by the Contractor. Where the EMP is in conflict with the Standard Specification, the EMP shall take precedence.

C3.6.4 SITE MANAGEMENT

C3.6.4.1 General

The Contractor shall draw up a plan of all parts of the construction site, showing the layout of site establishment, stockpiles, planned access and circulation routes, etc. to depict the scope of his planned operations. The plan shall be submitted to the ECO for comment and approval by the Engineer.

The Works area will be indicated on the layout plan and shall never exceed the boundaries of the site at any given location during the construction period.

Every precaution shall be taken, in accordance with this specification, to prevent pollution of air, soil, ground, and surface water as a result of construction or associated activities.

All equipment must be inspected regularly for oil or fuel leaks before it is operated. Leakages must be repaired on mobile equipment or containment trays placed underneath immobile equipment until such leakage has been repaired.

C3.6.4.2 Housekeeping

The Contractor shall ensure that his working areas are kept clean and tidy at all times. The ECO shall inspect these areas on a regular basis.

C3.6.4.3 Works area

Routes for temporary access and haul roads shall be located within the approved Works area and vehicle movement shall be confined to these roads. Movement of vehicles outside

the Works area shall not be permitted without authorisation from the Engineer, after consultation with the ECO.

All construction activities shall be restricted to working areas designated on the drawings and/or demarcated and approved by the Engineer. Materials, including spoil, shall only be stockpiled in the Works area.

C3.6.4.4 Fire risk and burning

Burning of vegetation including tree trunks and stumps cut during site clearing and establishment shall not be permitted.

The Contractor shall ensure that the risk of fire at any location on the site is kept to a minimum.

The Contractor shall supply fire-fighting equipment in proportion to the fire risk presented by the type of construction and other on-site activities and materials used on site. This equipment shall be kept in good operating order.

Open fires for heating and cooking shall only be permitted in protected areas designated by the ECO for this purpose.

No fires will be allowed adjacent to the boundary fence, either inside or outside the construction site.

Any welding or other sources of heating of materials must be done in a controlled environment, wherever possible and under appropriate supervision, in such a manner as to minimise the risk of veld fires and/or injury to staff.

C3.6.4.5 Storage of fuel and other materials

Fuel, lubricants, transmission, and hydraulic fluids shall only be stored in the Works area.

All fuel tanks must be installed above ground, depending on the volume of stored fuel, for easy detection of fuel leaks. All fuel tanks must be placed on a thick plastic sheet so as to prevent soil pollution, be set in a bund with earthen walls, and maintained throughout the contract.

Areas made available for fuelling or greasing of equipment and vehicles must be clearly demarcated on the layout plan. In order to prevent soil pollution, these areas must be covered with a protective material (e.g. a thick plastic sheet). No fuelling, greasing, or filling of oils may take place outside these demarcated areas.

The Contractor must provide adequate and approved facilities for the storage and recycling of used oil and contaminated hydrocarbons. Such facilities must be designed and sited with the intention of preventing pollution of the surrounding area and environment.

Cement must be stored and mixed on an impermeable substratum.

C3.6.4.6 Concrete batching plants

Concrete must be mixed only in an area demarcated for this purpose. All concrete spilled outside this area, must be promptly removed by the Contractor and taken to a permitted waste disposal site. After all concrete mixing is complete all waste concrete must be removed from the batching area and disposed of at an approved dumpsite.

The batching plant shall be enclosed by a bund wall with divisions and dedicated compartments for the various types of materials. Air filters shall be monitored and cleaned and replaced as per the supplier's guidelines.

Storm water must not be allowed to flow through the batching area.

Water laden with cement must be collected in a retention area for evaporation and not allowed to escape the batching area. This pond will be cleaned monthly.

Operators must wear suitable safety clothing.

C3.6.4.7 Safety

Equipment and stores should be locked up and not left unattended.

The Contractor must ensure that no unemployed labour seekers are permitted to gather at the site and no camp followers/shebeen operators shall be allowed to operate on or adjacent to the site.

Measures must be taken to prevent any interference that could result in flashover of power lines due to breaching of clearances or the collapse of power lines due to collisions by vehicles and equipment.

Measures must be taken during thunderstorms to protect workers and equipment from lightning strikes.

All tall structures must be properly earthed and protected against lightning strikes.

The Contractor must have a first aid box available on site and on all vehicles working on site.

The Contractor must submit a copy of the minutes of weekly health and safety meetings to the ECO.

C3.6.4.8 Blasting and drilling

A written warning of 2 days indicating the date and approximate time period of blasting activities shall be given to affected residents for the temporary removal of sensitive domestic animals such as horses, dogs, cats, birds, and cattle, before blasting and/or drilling activities commence during that period.

During blasting the stipulations of the Minerals Act, Act 50 of 1991 shall apply.

Should any warning not be given within the period specified above, the Contractor will be held liable for injuries to or deaths of the affected animals.

In order to minimise the potential impact on animals, it is proposed that soft explosives and/or noise mufflers be used.

When blasting, the Contractor shall take measures to limit flying rock. This may be achieved by matching the charge to the rock type, by using milli-second delay detonators or by using rubber blasting mats placed over the area to be blasted. Flying rock 150mm and larger which falls beyond the cleared working area shall be collected and removed together with the rock spoil.

When blasting under power lines the Contractor shall arrange for power to be temporarily switched off or have the lines moved.

C3.6.4.9 Fencing

Fencing shall be erected around sensitive natural or cultural elements to protect them from damage. No pedestrian or vehicular access shall be allowed to such fenced areas.

In places where temporary fencing is required, the Contractor shall erect such fencing and, when and where required by the Engineer, re-erect and maintain temporary fencing as necessary. Temporary fencing shall remain in position either until it is replaced by permanent fencing or until completion of the whole of the Works, unless the Contractor requires, or the Engineer directs its earlier removal. The Contractor shall erect and maintain the aforementioned temporary fencing in the locations and for the period described in the Contract.

If temporary fencing is removed temporarily for the execution of any part of the Works, it shall be reinstated as soon as practicable by the Contractor.
The clearing for permanent fencing shall be limited to the removal of trees and shrubs within 1m of the fence line. Where possible, the fence line must be aligned to retain trees or tree groups. There shall be no removal of the grass cover or topsoil within this width.

C3.6.5 CONTROL OF DAMAGE TO VEGETATION AND ANIMALS

The Contractor shall ensure that all works are undertaken in a manner which minimises the impact on vegetation and animals inside or outside of the Works area.

C3.6.5.1 Vegetation

As much of the existing vegetation as possible shall be retained. The removal of existing vegetation shall only occur at the sites designated for construction activities. Only woody vegetation may be cleared. During clearing of woody vegetation no basal cover or grass and topsoil shall be removed and damage to this layer shall be minimised as far as possible.

Bush and grass veld must only be cleared to provide essential access for construction

purposes.

No indigenous shrubs and/or trees shall be cut down by the Contractor. Removal, damage or disturbance of any vegetation outside the Works area is not permitted. Special care shall be taken not to disturb or destroy riverine vegetation.

Trees which have been selected for preservation by the ECO within or adjacent to the Works areas shall be fenced around their drip line. The fence shall be clearly marked with danger tape. No open fires shall be allowed within this fenced area, nor shall vehicles be parked underneath these trees. The area shall also not be used for materials storage or as allocation for temporary buildings. If such trees are located within the 15m working width of the pipeline, the pipeline shall be aligned to avoid these trees wherever possible.

Gathering of firewood shall not be permitted.

The Contractor shall take care that seeds are collected during the removal of alien vegetation in order to counter the spread of this vegetation type. Failure to do so may result in prosecution in terms of the Conservation of Agricultural Resources Act (Act 43 of 1983). A fine not exceeding R5000 and/or 2 years imprisonment can be imposed.

No vehicular access will be allowed on the grassy parts of the construction site.

C3.6.5.2 Disturbance of animals

Under no circumstances shall any animals be handled, removed, killed or interfered with by the Contractor, his employees, his sub-contractors or his sub-contractors employees. Snakes and other reptiles that may be encountered on the construction site must not be killed unless the animal endangers the life of an employee. Disturbances to nesting sites of birds must be minimized. Anthills and/or termite nests that occur in the Works area must not be disturbed unless it is unavoidable for construction purposes.

The Contractor and his employees shall not bring any domestic animals onto the site.

The Contractor shall ensure that the work site is kept clean and tidy and free from rubbish which would attract animal pest species. There shall be no feeding of native animals.

The Contractor shall ensure that domestic and native animals are safe from injury that may arise from unprotected Works.

The Contractor shall advise his workers and subcontractors of the penalties associated with the needless destruction of wildlife, as set out in the Animals Protection Act (Act 71 of 1962) sec. 2 (fine R2 000 and/or 12 months imprisonment).

C3.6.6 CONTROL OF DAMAGE TO SOIL AND WATER

C3.6.6.1 Stripping of topsoil

Topsoil shall be deemed to be the top 300mm layer of soil. This layer contains organic

material, nutrients and plant and grass seed. For this reason it is an extremely valuable resource for the rehabilitation and re-vegetation of disturbed areas.

Topsoil shall be stripped from all areas that are to be utilized during the construction period and where permanent structures and access is required. These areas will include the area comprising the permanent works, pipeline trenches, stockpiles, temporary and permanent access roads, construction camps, lay down areas, and any other area as indicated on the Works area drawings. Topsoil shall be stripped after clearing of woody vegetation and before excavation or construction commences.

Soil shall be stripped to a minimum depth of 150mm and maximum depth of 300mm or to the depth of bedrock where soil is shallower than 300mm. Herbaceous vegetation, overlying grass and other fine organic matter shall not be removed from the stripped soil.

No topsoil which has been stripped shall be buried or in any other way be rendered unsuitable for further use by mixing with spoil or by compaction by machinery.

Topsoil shall be stripped when it is in a dry condition in order to prevent compaction.

Stripping of topsoil shall be undertaken in such a way as to minimise erosion by wind or runoff.

C3.6.6.2 Stockpiling of topsoil

Topsoil should be temporarily stockpiled, separately from (clay) subsoil and rocky material, when areas are cleared. The Contractor shall ensure that subsoil and topsoil are not mixed during stripping, excavation, reinstatement, and rehabilitation. If mixed with clay sub-soil the usefulness of the topsoil for rehabilitation of the site will be lost. Temporary soil stockpiles shall not be higher than 2,5m, and the slopes of soil stockpiles shall not be steeper than 1 vertical to 1,5 horizontal.

Areas from which topsoil is to be removed shall be cleared of any foreign material which may come to form part of the topsoil during removal including bricks, rubble, any waste material, litter any other material which could reduce the quality of the topsoil.

Soil must not be stockpiled on drainage lines or near watercourses.

No vehicles shall be allowed access onto the stockpiles after they have been placed. Topsoil stockpiles shall be clearly demarcated in order to prevent vehicle access and for later identification when required.

After topsoil stockpiling has been completed, the Contractor shall apply soil conservation measures to the stockpiles where and as directed by the Engineer / Environmental Officer. This may include the use of erosion control fabric and/or grass seeding.

C3.6.6.3 Placement of topsoil

Topsoil shall be placed to a minimum depth of 150mm over all areas where it has been

stripped, after construction in those areas has ceased. Topsoil placement shall follow as soon as construction in an area has ceased.

All areas onto which topsoil is to be spread shall be graded to the approximate original landform with maximum slopes of 1:2,5 and shall be ripped prior to topsoil placement. The entire area to be covered with top soil shall be ripped parallel to the contours to a minimum depth of 300mm.

Topsoil shall be placed in the same soil zone from which it had been stripped. However, if there is insufficient topsoil available from a particular soil zone to produce the minimum specified depth, topsoil may be brought from other soil zones on approval by the Engineer after consultation with the ECO.

Where topsoil that has been stripped by the Contractor is insufficient to provide the minimum specified depth, the Contractor shall obtain suitable substitute material from other sources at no cost to the employer. The suitability of the substitute material shall be determined by means of a soil analysis which is acceptable to the Engineer.

No vehicles shall be allowed access onto or through topsoil after it has been placed.

After topsoil placement is complete, cleared and stockpiled vegetative matter shall be spread randomly by hand over the area covered with topsoil.

C3.6.6.4 Klip river and Rietspruit

The Klip River is situated approximately 250 m to the west of the construction site at its closest point, and the Rietspruit approximately 300 m to the east.

Site staff shall not be permitted to use the Klip River or the Rietspruit for the purpose of bathing, washing of clothing or vehicles nor disposal of any type of waste.

The Contractor shall not in any way modify nor damage the banks or bed of the Klip River or the Rietspruit and its drainage lines, unless required as part of the construction project specification and in consultation with the Project Manager and the ECO. Abstraction of water from the Klip River is allowed provided that no damage to the banks of the Klip River shall occur. Should damage occur the Contractor will be held liable for any reparation and/or rehabilitation to the banks of the Klip River and for prosecution in terms of the National Water Act (Act No. 36 of 1998).

All fuel, chemical, oil, etc spills must be confined to areas where the drainage of water can be controlled. Appropriate structures and methods to confine spillages such as the construction of berm shall be provided.

C3.6.7 Control of pollution

As a minimum requirement all waste emissions (hazardous, airborne, liquid and solid) from the site shall be kept within the limits of standards set in terms of relevant national and local pollution legislation and regulations.

C3.6.7.1 General

No waste of a solid, liquid or gaseous nature shall be emitted from the site without approval by the Engineer.

Precautionary measures must be taken to prevent any form of pollution.

Accidental pollution incidents shall be reported to the Engineer and the ECO immediately after they occur and shall be cleaned-up by the Contractor or a nominated clean-up organisation at the expense of the Contractor.

C3.6.7.2 Soil

Vehicle and plant maintenance shall be confined to the areas demarcated for this purpose. Should any amount of fuel, oil transmission or hydraulic fluids be spilled onto the soils the Engineer and the ECO shall be informed immediately. If ordered by the Engineer, tests must be conducted to determine the extent of soil contamination. The polluted soil shall be rehabilitated or remediated to the satisfaction of the Engineer, after consultation with the ECO. Proof of disposal of contaminated soil must be submitted by the Contractor to GDACE within 14 days of the disposal thereof.

C3.6.7.3 Water

Water containing waste shall be prevented from entering the Klip River or the Rietspruit either by seepage or natural flow. Oil absorbent fibres must be used to contain oil spilled in water.

Cost effective measures must be taken to minimise the flow of surface water to trench excavations.

On-site storm water management over the construction site shall be to the satisfaction of the Engineer.

C3.6.7.4 Air

All reasonable measures should be taken to minimise air emissions in the form of smoke, dust, and gases.
All machinery and vehicles used for the Works shall be in good working order. Any vehicle or piece of machinery that visibly emits excess pollutant shall be removed from site.

Waste must not be allowed to stand on site to decay, resulting in malodours. No fires shall be allowed if smoke from such fires will cause a nuisance to neighboring residents.

C3.6.7.5 Sewage

Any spillage of sewage caused by the Contractor or any of his employees or subcontractors during the construction activities shall be cleaned up at the expense of the Contractor.

C3.6.8 MANAGEMENT OF WASTE

In practice all wastes arising from construction activities are to be handled, transported and disposed of in accordance with the relevant regulations. All efforts should be made to minimise, reclaim or recycle waste, and failing that, dispose of it in a manner licensed by the government for that purpose.

C3.6.8.1 Sanitation

The Contractor shall provide adequate sanitation facilities in accordance with Clause PSA 1.2 hereof. The use of the surrounding veld for toilet purposes shall not be permitted under any circumstance.

C3.6.8.2 Wastewater

Definition: Wastewater is water that is contaminated by humans through their actions.

All run-off from fuel depots, workshops, truck washing areas, and washwater from concreting vehicles and other equipment shall be collected and directed through pollution traps to the operational sewers. If connection to the sewers is not possible, the wastewater shall be collected in settlement ponds, which shall be suitably lined at the Contractor's expense.

Wastewater may not be disposed of directly or indirectly into the Klip River or the Rietspruit. The Contractor shall provide suitable retention and filtration structures (which shall be properly maintained) for the collection of wastewater.
The Contractor shall provide washing and changing facilities. All run-offs from these washing and/or changing facilities shall be contained in the retention structures to the satisfaction of the Engineer.

C3.6.8.3 Solid waste

Definition: "Solid Waste" refers to all construction waste (such as rubble, cement bags, waste cement, timber, cans, other containers, wires and nails), household and office waste.

Solid waste shall be collected and stored in demarcated, fenced areas in skips and/or bins. The fenced areas or containers should be designed to prevent solid waste from being blown out by wind and should be strategically and conspicuously placed throughout the site.

Wherever possible solid waste that can be recovered shall be recycled.

Solid waste shall be disposed of at a registered solid waste disposal site. The prices submitted by the Contractor shall include all transportation and disposal costs of waste. Solid waste shall not be buried nor burned on site.

The entire works area and all construction sites must be swept of all pieces of wire, metal, wood or other material foreign to the natural environment.

C3.6.8.4 Hazardous wastes

Definition: Hazardous wastes are those which are proven to be toxic, corrosive, explosive, flammable, carcinogenic, radioactive, poisonous or as determined by the Hazardous Substance Act as amended.

Discharges of hazardous chemicals (such as paint, turpentine, oil and cement), as declared under the Hazardous Substances Act as amended, on the site or to the storm water system are prohibited.

Potentially hazardous raw and waste materials shall be handled and stored on-site in containers with tight lids that must be sealed and must be disposed of at an appropriately permitted hazardous waste disposal site. Such containers must not be used for purposes other than those originally designed for.

The following hazardous waste products shall be disposed of at a registered hazardous waste disposal site:

a) cement;
b) diesel, petroleum, oil and lubricants;
c) explosives;
d) drilling fluids;
e) pesticides;
f) paints and turpentine;
g) concrete additives; and
h) any other material which is listed in terms of the Hazardous Substances Act.

The Contractor must maintain a hazardous materials register.

C3.6.9 MANAGEMENT OF STORMWATER AND SOIL EROSION

The aim is to minimise soil loss from the site due both to wind and water.

C3.6.9.1 Storm water

At all stages of the contract, storm water control measures shall be applied to keep soil on-site by minimising

a) Erosion or leaching of water from temporary stockpiles of topsoil and permanent spoil dumps
b) Erosion from construction roads, excavations and borrow pits, where applicable
c) Silt-laden run-off from all areas stripped of vegetation, including excavation surfaces and stockpiles of spoil and topsoil (the correct placement of rocks together with straw bales can be used to prevent silt-laden run-off); and
d) Contaminated run-off from storage areas;

Thereby preventing it from entering waterways or the storm water drainage system.

Natural storm water run-off that is not polluted by site operations shall be diverted around

spoil dumps and topsoil stockpiles. Effective measures shall be taken to minimise the flow of storm water to excavations.

Where uncontaminated storm water has accumulated in excavations and needs to be pumped out, it must be disposed of in such a way that erosion does not occur along the course of its passage. Contaminated storm water shall not be disposed of into the waterways, unless it has been treated to the satisfaction of the Engineer, after consultation with the ECO.

C3.6.9.2 Control of erosion

At all stages of the contract, erosion of bare soil, other excavation surfaces and stockpiles of topsoil and spoil shall be prevented by the application of erosion control measures.

Should erosion occur due to negligence on the part of the Contractor to apply adequate measures, the Contractor will be responsible for reinstatement of the eroded area to its former state at his own expense. Any surface water pollution occurring, as a result of this negligence, shall be cleaned up by the Contractor or a nominated clean-up organization at the expense of the Contractor.
Cross and side storm water drainage measures shall be constructed on access and haul roads to the site and on roads within the site.

The Contractor shall ensure that run-off from access and haul roads, and that diverted into cross and side drains, does not cause erosion

C3.6.10 CONTROL OF DISTURBANCE TO NEIGHBOURS AND/OR AFFECTED RESIDENTS

All issues and items agreed to in the negotiations and discussions between the Owner and affected residents must be implemented.

C3.6.10.1 Scenic quality

The Contractor shall position all temporary structures as well as temporary plant on site in locations and at elevations which limit visual intrusion on neighbours. The type and colour of roofing and cladding materials shall be selected to reduce reflection.

The Contractor shall not establish or undertake any activities which, in the opinion of the Engineer, are likely to adversely affect the scenic quality of the area. The Engineer may direct the Contractor to refrain from such activities or to take ameliorative actions to reduce the adverse effect of such activities on the scenic quality of the environment.

No painting or marking of natural features shall be done. Marking for surveying and other purposes shall only be done with pegs and beacons.

All cut and fill forms shall be rounded at the edges to blend them with the surrounding landforms.

All packed rock and exposed rock cuttings shall be treated in order to blend their colour with the colours of the natural weathered rocks of the adjacent environment.

The colours of all permanent structures shall be chosen so as to blend in with the dominant colours of the surrounding landscape. Painted surfaces shall be painted with non-reflective (matt) colours.

C3.6.10.2 Noise

All noise levels must be controlled at the source. All employees must be given the necessary ear protection gear. Neighboring residents must be informed of excessive noise factors.

Noise emanating from construction activities must not be "disturbing noise", that is, the sound level from the site measured at the nearest dwelling must not exceed the ambient noise level by 7dBA or more.

Appropriate directional and intensity settings should be maintained on hooters and sirens, if applicable.

Silencer units on plant and vehicles shall be maintained in good working order. Any vehicle/machine emitting excess noise shall immediately be removed from site or effectively repaired.

Where required by the ECO after consultation with the Engineer, the Contractor shall provide noise reduction measures in the form of cladding and earth berm between sources of on-site noise and neighbours and/or affected property owners.

A speed restriction of 40 km/h shall be imposed on all construction vehicles in order to limit additional noise generated by these vehicles. This restriction shall apply to the site and any road within 2 kilometers of the site.

No loud music shall be allowed on site and in construction camps.

C3.6.10.3 Dust

The Contractor shall ensure that a minimum of dust is generated by construction and related activities. Roads and working areas should be maintained regularly and this may include the sprinkling of water. Water for this purpose shall be used sparingly to not generate run-off and resulting soil erosion.

The Contractor shall control dust from spoil dumps as specified above.

Soil and aggregate loads in transit must be kept covered, to prevent wind borne pollution (dust).

Stockpiles of soil must be kept covered or have a suitable dust palliative applied, such as water or commercial dust suppressants, to prevent windborne pollution.

C3.6.10.4 Social interaction and disruption

The Contractor shall maintain normal working hours (i.e. from 07:00 until 17:00) from

Mondays to Fridays for the duration of the construction period. The Contractor must inform all adjacent landowners of any after-hour construction activities and any other activity that could cause a nuisance e.g. the application of chemicals to the work surface.

The Contractor's activities and movement of staff shall be restricted to designated construction areas only. The Contractor and site staff may not interact directly with adjacent landowners but only through the Engineer, who will contact property owners to obtain permission.

The Contractor's staff shall wear special identity cards (with the employees photograph displayed on the card), which shall make identification possible, at all times. Any temporary staff employed by the Contractor or any sub- contractor appointed by the Contractor shall also comply with this clause.

Rapid migration of job seekers could lead to squatting and social conflict with resident communities and increase in social pathologies if not properly addressed. The Contractor must ensure that signs indicating the availability of jobs are installed.

Criteria for selection and appointment, by the Contractor, of construction labour must be established to allow for preferential employment of local communities.

C3.6.10.5 Disruption of services and access

Care must be taken by the Contractor to avoid damaging major and minor pipelines and other services. The relevant authorities must be notified of any interruptions of services, especially the Mid Vaal Local Municipality, the National Roads Agency, Spoornet, TELKOM and ESKOM.

Disruption of access for local residents during construction, and haulage or any other construction activity shall only take place with the prior consent of the Engineer.

The Contractor shall liaise with the Engineer on a regular basis with regard to specific activities that could cause inconvenience to property owners, especially increased vehicular traffic through residential areas adjacent to the site. The Contractor shall prior to commencement inform property owners of his planned activities within a reasonable period of time.

The movement of construction vehicles through the affected areas shall be restricted to off-peak hours to minimise adverse impacts on private vehicular traffic. Temporary access roads must not be opened until required and must be restored to its former state as soon as the road is no longer needed.

C3.6.10.6 Traffic control

The Contractor shall ensure that all construction traffic including that of subcontractors, vendors, suppliers of materials and services are notified that a special speed limit of 40 kph shall apply along any road within the adjacent Klipwater Township; and special attention shall be given to road signs. Vehicles not complying with this ruling shall on the instruction of the Engineer, be denied access to the Site.

C3.6.11 Archaeology and cultural sites

All finds of human remains must be reported to the nearest police station.

Human remains from the graves of victims of conflict, or any burial ground or part thereof which contains such graves and any other graves that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the South African Heritage and Resource Agency (SAHRA).

Work in areas where artefacts are found must cease immediately.

Under no circumstances must the Contractor, his/her employees, his/her sub- contractors or his/her sub-contractors' employees remove, destroy or interfere with archaeological artefacts. Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the National Heritage Resources Act, 25 of 1999.

A fence at least 2m outside the extremities of the site must be erected to protect archaeological sites.

All known and identified archaeological and historical sites must be left untouched.

Work in the area can only be resumed once the site has been completely investigated. The Engineer will inform the Contractor when work can resume.

C3.6.12 REHABILITATION

It is important that rehabilitation will commence as soon as feasible and to run in parallel with the construction and not to be left until completion of the works. This will increase the chances of successful rehabilitation as it can be monitored throughout the construction period.

The construction site shall be cleaned and rehabilitated as close as is reasonably possible to its original state.

All drainage deficiencies must be corrected.

Cut and fill areas must be restored and re-shaped.

Areas compacted by vehicles during construction must be scarified to allow penetration of plant roots and the re-growth of natural vegetation.

Rehabilitation of all the disturbed and compacted areas shall mean that these areas are ripped and covered with topsoil.

- Ripped shall mean - ploughed with a ripper to a depth of not less than 300mm in two directions at right angles.

- Top soiled shall mean - the spreading of a minimum of 150mm of stockpiled topsoil either before or after ripping over the surface to be rehabilitated.

The areas immediately adjacent to the Works which are not designated for paving shall be grassed in accordance with the relevant engineering specification.

All alien vegetation removed during construction shall not be replaced.

The rehabilitated areas will be weeded by the nominated rehabilitation contractor for a period of 1 year.

C3.6.13 RESPONSE TO PUBLIC COMPLAINTS

The Contractor shall assist the Engineer with responding to queries and complaints from the public regarding construction activities by:

a.) Documenting the details of such communications and submitting the information to the Engineer for inclusion in the complaints register;
b.) bringing any such matters to the attention of the Engineer immediately as they arise;
c.) taking any remedial action as per the Engineer; and d.) discuss such matters at the site meetings.

The Contractor shall assist the Engineer and consult with affected parties for the purpose of explaining the construction process and answering questions raised by affected parties at reasonable times.

Should the owner of any property, contact the Contractor during the construction period regarding specific requests, the Contractor shall include all pertinent details in his report (Section 2.3 hereof).

C3.6.14 CLEARANCE OF SITE ON COMPLETION

On completion of the Works, the Contractor shall clear away and remove from the site all construction plant, surplus materials, foundations, plumbing and other fixtures, rubbish and temporary works of every kind. Areas thus cleared shall be graded and scarified to restore the ground to its original profile as near as practicable before topsoil placement.

C3.6.15 COMPLIANCE WITH ENVIRONMENTAL MANAGEMENT SPECIFICATIONS

a.) All persons employed by the Contractor or his subcontractors shall abide by the requirements of these Environmental Management Specifications.
b.) Any employees of the Contractor or his subcontractors found to be in breach of any of the Environmental Management Specifications may be ordered by the Engineer to leave the site forthwith. The order may be given orally or in writing. Confirmation of an oral order will be given as soon as practicable but lack of confirmation in writing shall not be a cause for the offender to remain on site. No extension of time will be granted for any delay or impediment to the Contractor brought about by a person ordered to leave the site.
c.) Supervisory staff of the Contractor or his subcontractors shall not direct any person

to undertake any activities which would place such person in contravention of the Environmental Management Specifications.

d.) Via these specifications the Contractor has been made aware of what actions are required of him and/or his subcontractors. Certain do's and don'ts have been given and onus for compliance rests with the Contractor as he is the only person capable of controlling these aspects. A fine/reward system will be implemented to encourage compliance. For every week that the Contractor successfully complies with the Environmental Management Plan and Specifications a bonus sum of R500 will be generated. However, for each and every time that the Environmental Management Plan and Specification is not met, a fine of R500 will be imposed.

C3.6.16 MEASUREMENT AND PAYMENT

Unit:

Under Schedule No. 1 in Bill: Environmental Management ..... Sum.

The lump sum tendered shall include full compensation for initiating and maintaining the environmental awareness campaign as required in the Environmental Management Plan and Specifications.