



Municipal Corporation ,Bikaner.

Name of Work :- Invitation of EOI (Two stage/ Two Cover system) for the Operation and Maintenance work of 20 MLD, STP & SPS situated at Vallabh Garden Area, Bikaner.

Name of Contractor :-

Technical Bid

Date of Sales 20.01.2015 to 27.01.2015	Date of Receipting 28.01.2015	Date of Opening of Technical Bid : 02.02.2015
Earnest Money Cheque Draft No. :	Date :	
Earnest Money M.C.B. Receipt No. :	Date :	
Earnest Fees M.C.B. Receipt No. :	Date :	

Observe carefully plant & machinery of STP & SPS before tendering the same will be handed over to the qualified tenderer on current running condition.

**Executive Engineer,
Municipal Corporation,
Bikaner.**

Signature of Tendering Contractor

TECHNICAL BID

Section I. – Instruction to Bidders

A. General

1.Scope of Bid

1.1 The Employer, as defined in the accompanying bidding Data sheet, wishes to receive bids from the eligible bidders for the work. That is described in the bidding data sheet.

1.2 The successful bidder will expected to complete the works the period stated in the bidding Data sheet and to bid from the date of issuance of the Notice to proceed, or such other data may be specified in the Notice to proceed.

1.3 Through these bidding documents the terms “bid” and “tender ” and their derivatives (“bidder/”renderer” and “bid ”/”tendered “, “bidding “/ tendering “etc) are synonymous and day means calendar day. Singular means plural.

2. ELIGIBLE BIDDER

The Bidders are required appropriate experience in Construction Operation and Maintenance of Sewerage Treatment Plants and SPS.

2.1 The invitation to bid is open to bidders who have been prequalified by under contracts with values equal to or greater than Rs.200 lakhs in various Govt. departments under and who have evaluated to have adequate financial capability to undertake the subject works.

2.2 Bidder shall provide such evidence of eligibility satisfactory to the Employer, as the Employer shall reasonably request.

2.3 Bidder shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

i) “Corrupt practice “Means behavior on the party of officials in the public or private sector by which they improperly enrich themselves and or those close to them or induce other to do so, by misusing the position in which they are placed, and it includes the offering, giving receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution.”

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

- a) Will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

- b) If bidder debarred by the State Government or any procuring entity shall not be eligible to participate in any procurement process.

2.4 The bidder must be registered contractor under in appropriate class with the Department/Organization. He shall furnish necessary proof for the same.

2.5 The sales tax registration number should be quoted and a VAT/Sales tax clearance certificate from the commercial taxes officer of the circle concerned shall be submitted without which the Bid is liable to be rejected. He is also required to provide proof of Permanent Account Number (PAN) given by Income tax department.

3. QUALIFICATION OF BIDDER

3.1 To be Qualified for award of contract, Bidder shall:

- a) Submit a written power of attorney authorizing of the bid commit the bidder and
- b) Update the following information submitted with their applications for prequalification, and continues to meet the minimum threshold criteria set out in the prequalification document:

- i) Financial strength
- ii) Contract work in hand
- iii) Future commitments
- iv) Current litigations

3.2 Bid submitted by a joint venture of two or more firms as partners shall comply with the following requirement s:

- a) The bid, and in a case of successful Bid, the form of Agreement, shall be signed by the authorized representative so as to be legally binding on all partners;
- b) One of the partners shall be authorized to be in charge and this authority shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the partners;
- c) All partners in charge shall be authorized to incur liabilities ,received payment s and receive instruction s for and behalf of any or all partners of joint venture and the entire execution of the contract including payment shall be done exclusively with partner in charge;
- d) All partner of the joint venture shall be liable jointly and severally for the execution of the contact in accordance with the contact terms and a reveal statement to this effect shall be included in the authorization mention under (b) above as well as in the bid From of Agreement (in case of a successful bid) and
- e) A copy of the Agreement entered into by joint Venture partners shall be submitted with the Bid.

4. ONE BID PER BIDDER

4.1 Each bidder shall submit only one bid by himself or as a partner in a joint Venture .A bidder who submit s or participates in more than one bid for the particular Works will be disqualified. The Limitation, however will not apply in respect of which include specialist sub –contractors or equipment suppliers who are used by the more than one bidder.

5. COST OF BIDDING

5.1 The bidder shall bear the costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs.

6. BID SECURITY

6.1 Bid Security shall be 2% of the value of the Works indicated in the NIT. For bidders registered with the Employer, the bid security shall be 0.5% of the value of works indicated in the NIT. The bid security shall be in Indian Rupees, if not otherwise specified in the Bidder data sheet. Bid Security Shall be provided in the favor of COMMISSIONER NAGAR NIGAM BIKANER payable at Bikaner.

6.2 The Bid Security may be given in the form of a banker's Cheque or demand draft of a Scheduled Bank in India.

6.3 The Bid Security of unsuccessful Bidders shall be refunded soon after final acceptance of successful Bid and signing of Contract Agreement and submitting Performance Security by successful Bidder.

6.4 The Bid Security taken from a Bidder shall be forfeited in the following cases, namely:-

- i. when the Bidder withdraws or modifies his Bid after opening of Bids; or
- ii. when the Bidder does not execute the agreement in accordance with clause-16 Award of contract after issue of letter of acceptance/ placement of Work order within the specified time period; or
- iii. when the Bidder fails to commence the Works as per Work Order within the time specified; or
- iv. when the Bidder does not deposit the Performance Security in accordance with Clause-17 in the prescribed time limit after the work order is placed;

6.5 In case of the successful bidder, the amount of Bid Security may be adjusted in arriving at the mount of the Performance Security, or refunded if the successful bidder furnishes the full amount of Performance Security. No interest will be paid by the Employer on the amount of Bid Security.

7. SITE VISIT

7.1 The bidder is advised to visit and examine the site of works and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the works .The cost of visiting the site shall be at the bidder own expense.

7.2 The bidder and any of its personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such visit ,but only upon the express condition that the bidder , its personnel and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof , and will be responsible for the death or personal injury loss of or damage to property ,and any other loss ,damage costs and expenses as a result of the inspection.

B.BIDDING DOCUMENTS

8. CONENTS OF BIDDING DOCUMENTS

8.1 The bidding documents are those stated below, and should be in conjunction with any Addenda issued in accordance with **Clause:9**

Part-1

Invitation for Bids

Section I: Instruction to Bidders

Section II: Bidding data

Section III: Condition of contract

Section IV: Contract Data

Section V: Technical Specifications

Section VI: Bills of Quantities

8.2 The bidder is expected to examine carefully the consent of the bidding documents, Failure to comply with the requirements of bid submission will be at the bidder's own risk . Bids which are not substantially responsive to the requirements of the bidding documents will be rejected.

9. AMENDMENT OF BIDDING DOCUMENTS

9.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at its own initiative or in response to clarification request by a prospective bidder, modify the bidding Documents by issuing addenda

9.2 Any Addendum thus issued shall be part of the bidding documents sub clause 8.1 and it will be notified in writing or by fax to all purchasers of the bidding documents and will be bidding on them prospective bidder shall acknowledge receipt of each addendum by fax to the Employer.

9.3 To afford prospective bidders reasonable time in which to take the addendum into account in preparing their bids, the Employer may at its discretion, extended the deadline for submission of bids.

C. PREPARATION OF BIDS

10. LANGUAGE OF BID

10.1 The Bid prepared by the bidder and all correspondence and documents relating to the bid exchanged between the bidder and the Employer, shall be written in the English /Hindi language. Supporting documents and printed literature furnished by the bidder may be written in another language, provided that they are accompanied by an accurate translation of the relevant passages in English /Hindi language, in which case for purpose of interpretation of the Bid, the English/Hindi translation shall govern.

11. DOCUMENTS COMPRISING THE BID

11.1 The bid submitted by the bidder shall comprise two envelopes submitted simultaneously, one containing only the technical proposal and the other the price proposal.

11.2 The technical proposal shall be comprised of the bid security, Volume -1, Technical proposal. Without limiting the generality of the foregoing, technical proposal shall contain the following.

- i) Bid security
- ii) Schedules for technical parameters
- iii) Power of Attorney
- iv) Information on Qualification
- vi) Schedule of compliance with the bidding Documents
- Vii) Proof of payment of cost of bidding document.
- Viii) any other materials required to be comprised of the fully completed and submitted by bidders in accordance with these instruction to bidders.

11.3 The price proposal shall be comprised of the fully completed Volume -2, price proposal .Without limiting the generality of the foregoing; the price proposal shall contained the following.

- i) Bid forms for price proposal & price proposal

li) Bill of Quantities

iii) Materials required to be comprised of the fully completed and submitted by bidders in accordance with this instruction to bidders.

12. BID FORMS AND PRICES

12.1 The bidder shall complete the bid forms and Schedules furnish in the bidding documents in the manner and details indicated therein and the following the requirements of sub – clause 12.2, 12.3 & 12.6.

12.2 Unless stated otherwise in the bidding documents the contract shall be for the whole work as described in the clause 1.1 bases on the schedule of unit rates and prices submitted by the bidders.

12.3 The bidder shall fill in the rates and prices for all items of works described in the bill of Quantities, and on alteration or addition shall be made to the schedules by the bidder .Quoted rates must be in ink or typed out clearly & legibly in the both figures and in words in the spaces provided in the form. The same person signing the bid on behalf of the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices described in the bill of Quantities.

12.4 All duties, taxes and other levies payable by the bidder under the contract or for any other cause, shall be included in the rates and prices, and the total Bid price submitted by the bidder.

13. CURRENCIES OF BID AND PAYMENT

13.1 The unit rates and prices shall be quoted by the bidder entirely in Indian Rupees.

14 BID VALIDITY

14.1 Bids shall remain valid for a period, as stated in the bidding data, after the date of submission of bids as specified. The original bid together with the required copies must received by the Employer at the address specified no later than any time as stipulated in the bidding data sheet.

14.2 The Employer may at his direction ,extend the dead line for the submission of Bids by amending the bidding documents in accordance with sub clause : 11.3 in which case all rights & Obligations of the Employer and bidders previously subject to the original deadline will be thereafter be subject to the deadline as extended

15. EMPLOYER 'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR BIDS

15.1 Notwithstanding the Employer reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders on the grounds for the Employer action.

16. AWARD OF CONTRACT

16.1 Subject to the provision of clause 15, the employer will award the contract to the bidder whose bid been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated bid price for this contract, when evaluated in conjunction with other contracts to be awarded concurrently for this project and taking into account any discount offered by bidders provided that such bidder has been determined to be (i) eligible in accordance with the provision of clause 2 and (ii) qualified in accordance with the provision of clause 4

17. PERFORMANCE SECURITY

17.1 The amount of Performance Security shall be ten percent, or as specified in the Bid Data Sheet, of the amount of the Work Order. The currency of Performance Security shall be Indian Rupees and may be given in the form of a Banker's Cheque or demand draft of a Scheduled Bank in India.

17.2 If the Bid, which results in the lowest evaluated bid price, is seriously unbalanced or front loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Materials, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analysis, taking into consideration the schedule of estimated Contract payments, the Employer may require that the amount of the performance security be increased (to a maximum of 20% of the bid value of such items) at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

17.3 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Employer may either cancel the procurement process or, if deemed appropriate, award the Contract at the rates of the lowest Bidder, to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

17.4 Forfeiture of Performance Security: Amount of Performance Security in full or part may be forfeited in the following cases:-

- i. when the Bidder does not execute the agreement within the specified time; after issue of letter of acceptance; or
- ii. when the Bidder fails to commence the Works as per Work order within the time specified; or
- iii. when the Bidder fails to complete Contracted Works satisfactorily within the time specified; or
- iv. when any terms and conditions of the contract is breached; or
- v. to adjust any established dues against the Bidder from any other contract with the Employer; or
- vii. Notice of reasonable time will be given in case of forfeiture of Performance Security. The decision of the Employer in this regard shall be final.

SECTION II : BIDDING DATA

The following specified data for the works to be procured shall complement, amend or supplement the provisions in instructions to bidders- Section 1 .whenever there is a conflict; the provisions herein shall prevail over those in the instruction to Bidders.

Clause 1.1	The Employer is : Commissioner, Municipal Corporation, Bikaner
Clause 1.2	Name of Works : Operation & Maintenance of 20MLD Capacity Sewage Treatment Plant (STP) & Sewage pumping station at Vallabh Garden, Bikaner including Civil, Mechanical & Electrical Works. Description of works: The work involves Operation & Maintenance of Sewage pumping station (SPS) & a Sewage Treatment plant. The STP will consist of an inlet chamber, a main distribution chamber, coarse & two fine screen chambers two grit chambers a distribution box ,3 Anaerobic ponds ,2 Facultative ponds, chambers associated with ponds, interconnecting piping, office building , Watchman cabin, underground water tank & pumps house , treated sewage sump and high pressure pump house. The SPS will consist of an inlet chamber, coarse screen chamber, wet well MCC & PLC & D.G set room with the associated Mechanical & Electrical equipments.
Clause 1.2	Period of contact: The works shall be of 12 months from the start date, which shall be date of the Notice to proceed or such other start Date may be specified in the notice to proceed.
Clause 3.2	The joint venture agreement should indicate precisely the responsibility of all members of JV in respect of planning works execution & financing of the project .This should not be varied/modified subsequently without prior approval of the employer.
Clause 14	Bid Validity : Bid shall remain valid for a period of 90 Days after the date of submission of the bid.
Clause 6	Bid Security : A Bid security in the amount of Rs. 62,600/- (Sixty Two Thousand Six Hundred) shall be provided as a part of the bid , which shall remain valid for a period of 180 days beyond the validity of the bid.
Clause 4	QUALIFICATION OF BIDDER : The pre – Qualification of the bidder shall be confirmed.

SECTION III. – CONDITION OF CONTRACT

1. **Security deposit:** Security deposit against installed Plant & Machinery & Laboratory testing Equipment. At the rate
2. **Power Factor:** To maintain the power factor 0.9, if it is less than 0.9, penalty should be double as mention in the JVNNL Electricity bill for sewage pumping station.
3. **Consent To Operate:** Renewal of Consent to Operate Form no. XIII-A, every year. As mention by Pollution control Board of Rajasthan.
4. **Subcontracting:** No Subcontract shall be made without the prior written approval of the Employer of the Subcontractor & the subcontract.
5. **Contractor Risk:** Contractor Shall be responsible for all risks of loss of or Damage to Physical property and of personal injury & death which arise during & in consequence of its Performance of the contract.
6. **Employer 's Risk:** The Employer shall be responsible for excepted risk which are
(a) insofar as they directly affect the Operation & Maintenance work in the employer 's country ,the risk of war ,hostilities ,invasion ,act of foreign enemies, rebellion ,revolution , insurrection or military or usurped power ,civil war ,riot , commotion or disorder (unless restricted to the contractors employees),& contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive .

OR

(b) A cause due Solely (belong) to the design of the works .
7. **Communications:** Communications Between parties which are referred to in the condition are effective only when in writing.
8. **Safety:** The Contractor is responsible for the safety of all activities on the plant.
9. **Liquidated Damage:** The contractor shall pay Liquidated Damage to the employer at rate per day if the plant is not operated due the not Available of spare parts or any other reason excluding employer risk as mention above.
10. **Correction of Defects:** The contractor shall correct defects which he notice himself or on employer Notice. Every time notice of defect is given, a defect correction period for the notified defect begins the defects notified by the engineer shall be rectified within 7day or as specified by engineer.

Termination:

A) Contractor's default

The Employer may terminate the contract if the Contractor causes breach of the Contract which include:

- a) The Employer gives Notice that failure to correct particular defect is breach of contract and contractor fails to correct such defect within a reasonable period of time determined by the employer.
- b) The contractor does not maintain the performance which is required, under the conditions of contract for operation and maintenance.
- c) If the contractor in the Judgment of the employer has engaged in corrupt or fraudulent practices in competing or in executing the contract.
- d) The contractor abandons the operation of the Facility.

B) Consequences of Termination by Department

If the Department, with reasonable grounds, terminates the contract under clause-A above, the Secured Advances, and any other sums of the contractor with the Department, shall be fortified and action shall be taken against him as per clause of Conditions of Contract, if deemed appropriate

SECTION IV : CONTRACT DATA

1. Language and Law

- 1.1 The law which shall govern the conduct of the contract and according to which the Contract shall be construed is that in force in the State of Rajasthan, India.

2. Personnel

The Contractor shall provide details of key personal proposed for administration, Execution and the quality control and shall complete the following schedule of key personnel which summarizes their qualifications and experience. The contractor shall attach biographical data in support of his proposal Engagement of the proposed personnel will be the subject to the Employer's .Contractor will be required to provide a replacement with the equivalent with or better qualifications abilities and relevant experience . An attendance register will be maintained at site and a copy should be attached with monthly bill.

Position	Name	Qualification	Total years of experience	Total years of Relevant Experience
Plant Manager				
Shift in charge				
Electrician				
Pump operator				

3. Insurance

- 3.1 The minimum amount of third party liability insurance cover shall be Rs.....(.....) per occurrence or event ,with the number of occurrence not less than four . The contractor shall promptly notify the Employer of each claim made under the third party liability coverage and shall renew the third party Insurance after each such occurrence in Order t maintain the number of covered occurrences at not less than four.
- 3.2 The minimum coverage against damage to the works and materials during O & M shall be Rs.

4. Disputes

- 4.1 Engineer Decision : if any dispute of any kind whatsoever arise between the Employer and contractor in connection with ,or arising out of the contract or the execution of the work s, whether during the executions of works or after their completion and before or after repudiation or other termination of the Contact, including any dispute as to:
- The meaning of the specification, designs,& instructions here in before mentioned.
 - The quality of the workman ship or materials
 - Any opinion ,instruction ,determination ,certificate or valuation of the Engineers or

- d) Any other question, claim right matter or anything whatsoever in any way arising out of or relating to the contract, design, specifications estimates instructions, condition order or the failure to execute the same

The dispute shall in the first place, be referred in writing to the Engineer who has jurisdiction over the works specified in the contract with a copy to the other party. Such reference shall state that it is made pursuant to this clause. Not later than 28 days after the day on which he received such reference the engineer shall state that is made pursuant to this clause.

Subject to the other forms of settlement herein after provided the Engineer's decision in respect of every dispute or difference so referred shall be final and binding upon the contractor and the employer. Unless the contract has already been repudiated or terminated the contractor shall, in every case, continue to proceed with all the due diligence and the contractor and the Employer shall give effect forth with to every such decision of the Engineer until or unless the same shall be revised in an Amicable settlement or as here in after provided.

4.2 Remedy When the Engineer's Decision is not Accepted: If either the Employer or the Contractor be dissatisfied with any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before 28 days after the day on which he received the reference then either the Employer or the contractor may on or before the twenty eight day on which he received the notice of such decision or before the twenty eight days after the day on which the said period of 28 days expired as the case may be give notice to the other party with a copy to the Engineer of his intention to commence arbitration for the settlement of the dispute.

If the Engineer has given notice of his decision as to the a matter in dispute to the Employer and the contractor no written notice to commence arbitration has been given by either Employer or the contractor on or before the twenty eight days after the days on which the parties received notice as to such decision from the engineer, the said decision shall become final and binding upon the Employer and the Contractor.

4.3 Amicable Settlement : where notice of intention to the commence arbitration has been given in accordance with sub clause 4.2 arbitration shall not be commenced unless an attempt has first been made by the parties to settle the disputes amicably provided that unless the parties otherwise agree, arbitration may be commence on after the fifty –sixty days on which the notice of mention to commence arbitration was given whether any attempt any amicable settlement thereof has been made.

4.4 Arbitration: Any dispute in respect of which

- a) the decision, if any of the Engineer has not become final and binding Pursuant to sub clause 4.1 and
- b) amicable settlement has not been reached within the period stated in sub clause 4.5

shall be finally resolved arbitration .The arbitration will takes place in accordance with Indian Arbitration and conciliation Act 1996 and the arbitration will take place at Bikaner .Arbitration may be commenced prior to or after completion of the work ,provided that the obligation of the employer ,the Engineer and the contractor shall not be altered by any reason of the arbitration being conducted during the progress of the works.

4.5 Contractor to execute works pending Settlement: Whether the dispute is referred to the Engineer, to amicable settlement, or the law courts as the case may be the Contractor shall unless the contract has been repudiated or terminated proceed to execute and complete the work with all due diligence pending settlement of said dispute or differences.

5. Fire Prevention

5.1 The contractor shall take all precaution necessary to ensure that no vegetation along the line of the road outside the area of the permanent works is affected by the fires arising from the execution of the works. The contractor shall obtain and follow any instructions of the competent authorities with respect to fire hazard when working in the vicinity of gas installation, should a fire occur in the natural vegetation or plantation adjacent to the road for any reason the contractor shall immediately suppress it . in the event of any other fire emergency in the vicinity of the works the contractor shall render assistance to the civil authorities to the best of ability .Areas of forest, scrub or plantation damaged by fire considered by the Engineer to have been initiated by the contractor staff or labour shall be replanted and other wise restore to the satisfaction of the Engineer at the contractor's expense.

6. Fair Wages

6.1 The contractor shall pay not less than fair wages /minimum wages to laborers engaged by him on the work as revised from time by the Government of Rajasthan , but the government shall not be liable to pay any thing extra for it except as stipulated in price adjustment of the contract.

(Explanation : “Fair wages “ means minimum wages for the time or piece work , fixed or revised as established by the state Government under the Minimum Wages Act, 1948)

6.2 The contractor shall notwithstanding the provisions of any contract to the contrary , cause to be paid fair wages to laborers indirectly engaged on the work including any labors engaged by his sub – contractor in connection with the said work, as if the labors have been immediately employed by him.

6.3 In respect of all labors immediately or directly employed on the work for the purpose of the Contractor's part of this agreement ,the contractor shall comply with of cause to be complied with the public works department contract labor regulations made or that may be made by the government from time to time in regards to the payment of wages ,wage period deductions from wages recovery of wages not paid and unauthorized deductions ,maintenance of wages register wage card publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of a like nature.

6.4 The engineer shall have the right to deduct from the money due to the contractor any sum required or estimate to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the condition of the conditions of the contract for the benefit of the worker or workers, nonpayment of wages or of deductions made there from which are not justified by the terms of the contract or as a result of non-observance of the aforesaid regulations.

6.5 Vis-à-vis the Government of Rajasthan the contractor shall be primarily liable for all payments to be made and for the observance of the regulations, aforesaid without prejudice to his right to claim indemnity from his sub-contractors.

6.6 The regulations aforesaid shall be deemed to be part of this contract and any breach thereof, shall be deemed to be breach of the contract.

7 Housing for Labor

7.1 The contractor at his own expenses shall provide and maintain, in clean and sanitary condition, living accommodation for those employed by him on the project. Each Building for living accommodation shall be provided with lights water supply and sanitary facilities and be properly furnished.

8. Safety and Accident Prevention

8.1 Due precautions shall be taken by the contractor, at his own cost to ensure the safety and protection against accidents of all staff and labor engaged on the works, local residents in the vicinity of the works and the public travelling through the works. The contractor shall have on his staff on site a designated officer qualified to promote and maintain safe working practices. This officer shall have authority to issue instructions and shall take protective measures to prevent accidents. Including but limited to the establishment of safe working practices and the training of staff & labor in there.

9. Protective clothing and foot wears

9.1 The contractor shall at his own expense provide protective clothing and equipments to all staff and labor engaged on the works to the satisfaction of the Engineer and on his failure to do so the Employer shall be entitled to provide the same and recover the cost from the contractor. Such clothing and equipment shall include at a minimum protective foot wear for workmen undertaking sludge removal any workmen performing paving works protective foot wear clothing, cream, gauntlet-type gloves, hats safety glasses or goggles and filter masks for undertaking lime stabilization works hard hats for workmen engaged on bridge construction and other wise as appropriate to the job in hand and to the Engineer's satisfaction.

10. FIRST-AID SERVICES

10.1 The contractor shall at his own expenses provide first-aid equipment at all camps and work site to the satisfaction of the Engineer and shall ensure that at all work sites. A first-aid post shall be

established at each base camp facilities appropriate medical supply and staffed on a full-time basis by a qualified paramedical attendant.

11. Health and pests

11.1 The contractor shall at his own expense and throughout the period of the contract ensure that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements for his staff and labor and shall comply with all regulation and requirements of the local health authorities with respect to disease prevention and control. He shall warn his staff and labor of the danger of communicable disease including those transmitted by insect, water, fecal/oral contact and sexual activities. The contractor shall take the precautions necessary to protect all staff and labor employed on the site from the insect nuisance, rats, and other pest and minimize the danger to the health and the general nuisance caused by the same.

12. TAKING OVER PROCESS

12.1 At the end of the contract period and subject to the provision or its earlier terminations except on account of default of the Contractor. The contractor, the contractor shall request the Engineer to take over the Facilities and /or system. The Authority shall take over the facilities and /or system within 7 days of such a request being made. The contractor shall:

- .. Cease all further operation except for such operations as may be necessary and instructed by the Engineer's Representative for the purpose of making safe or protective those part of the facilities and /or system and any operations required to leave the site in clean and safe condition.
- .. Hand over all documents and supplies for which the contractor has received payment.
- .. Remove contractor's equipments which is on the site & repatriate its entire staff & labor from the site.
- .. Provide adequate training to ensure complete transfer of technology of entire operation & maintenance of system /automation to the successor contractor to the satisfaction of the Engineer.

The contractor shall supply to the Engineer a detailed of the total amount that the contractor considers payable under the contract before the end of the contract period. The Engineer within 28 days of the receiving the contract's account shall certify any final payment that is due to the contractor, or indicate to the contractor the corrections or additions that are necessary. If the final account is still unsatisfactory, after the contractor resubmits it, the Engineer shall decide on the amount payable to the contractor and issue a payment certificate.

The Authority shall any time, within a period of 90 days from the completion Date or Termination date as applicable, carry out an independent assessment of the facilities and /or system departmentally or through a successor contractor. Any deficiencies in the facilities /or system shall be made good by or at the cost of the contractor so as to bring the facilities and /or system into good repair and proper working condition as handed over at the commencement date and subsequent works done pursuant and normal wear and tear excepting

SECTION -V : THECNICAL SPECIFICATION

Scope of work During Operation & maintenance.

1.) (a) The bidder shall quote spare part consumable & tools required during operation & maintenance except electric power and electric power bills will be paid by Municipal Corporation, Bikaner.

(b) All repairing of Pumps, Plants and Machineries done by Contractor on his own cost.

(c) Repairs shall be made as and when needed very promptly on the spot or at the Contractor's/ Manufacturer's workshop. The need of repair on the spot or at the Contractor's workshop has to be defined in coordination with the Employer's representative and according to the status of spare parts availability.

(d) The Contractor shall keep a reasonable stock of spare parts so that the down time of equipment can be kept within the limits specified. The contents of the stock and the reorder level of the inventory have to be approved by the Employer's representative.

(e) The Contractor and his staff shall maintain a high degree of awareness in operation and maintenance of the Plant and all relevant safety codes and procedures. At all times the Plant, its equipment and surrounds shall be kept clean and in order' including the buildings, floors, walls, roofs, windows, and garden etc.

f) All necessary transportation shall be arranged and made by the Contractor at his own expense.

g) The Contractor has to ensure that there is always there is sufficient stock of 15 days of consumables, laboratory chemical, etc.,

h) The Contractor has to ensure that there is always there is minimum stock of 30 days requirement of laboratory chemicals.

2.) Staff Requirement During Operation & Maintenance

a) Plant Manager (01 No.)with an engineering Degree in civil ,Mechanical, or electrical and having at least five year experience in operation & Maintenance of pumping station or treatment plant.

b) The following minimum staff is to be provided at Sewage Pumping Station.

i) Electrician

(ITI pass with min. Exp. 5year.)

1no

ii) Pump operator cum Shift In charge

4nos. (one in each shift + Reliever)

(10 pass With min. exp. 5years)

iii) Sweepers

3nos. (one in each shift)

c) The following minimum staff is to be provided at sewage treatment plant .:

i) Electrician

(ITI pass with min. Exp. 5year.)

01 no.

ii) Pump operator

04nos. (one in each shift + Reliever)

(10 pass With min. exp. 5years)

iii) Chemist /Micro –Biologist.

01 no.

iv) Sweepers

06nos. (two in each shift)

d) Note Labors as required shall be provided by the contractor during O & M.

3 : The routine maintenance task required are as follows:

a) Removal & disposal of screening s & grit from the inlet works:

b) Cutting the grass on the embankment and removing it so that it does not fall in the pond.

c) Removal of floating scum from the surface of the facultative pond.

d) Spraying the scum of Anaerobic ponds with plant effluent to prevent fly breeding.

e) Removal of any accumulated solids in the inlets & out lets.

f) Repair of any damage to the embankments caused by rodents or other animals.

g) Repair of any damage to fences & gates.

h) Up keeps of plants.

3.1 In addition to the above routine maintenance following routine test shall be carried out as part of O &M.

a) Raw sewage: pH value, suspended solids, volatile solids, BOD 3 at 27 o C .

b) Anaerobic pond effluent pH value, suspended solids ,BOD 3 at 27 o C.

c) Facultative Pond effluent: pH value ,Suspended Solids BOD 3at 27 o C.

d) Note:

i) Test on raw Sewage shall be done daily.

II) Tests on Anaerobic pond effluent shall also be done daily.

iii) Test on facultative pond contents will be done daily, except for algal count & types of algae, which will be done once a fortnight.

iv) The results of the above test shall be presented to Municipal Council, Bikaner every week in the format indicated in the Table -1 below and test results also obtained monthly certificate of Pollution Control Board satisfactory.

Table - of Raw 1

Quality & Treated Sewage

Date of Sampling

Item	Result		
	Influent	Anaerobic Pond Effluent	Facultative Pond Effluent
PH			
Total Suspended Solids mg/l			
Chemical Oxygen Demand (COD) mg/l			
Bio-Chemical Oxygen Demand (BOD) (3 days at 27 C) mg/l			
Oil & Grease mg/l			

3.2 Mechanical & Electrical Equipment.

A) The contractor shall maintain log book for operation & maintenance of each equipment based on the operation instruction & maintenance instruction provided by manufacturer of equipment.

B) The Maintenance Schedule the following.

i) D.G set operation at least once in a week.

ii) Each lifting type screen at S.P.S shall be cleaned at least two times in one shift.

iii) Mechanically cleaned screens (any one) at STP shall not be standby mode for more than seven days.

iv) Grit removal equipment (any one) at STP shall not be standby mode for more than seven days.

v) All sluice gates shall be operated at least once in a month.

vi) All sluice valves shall be operated at least once in a month.

vii) The crane shall be operated at least once in a month.

Vii) High pressure pumping system shall be operated at least once in a week.

c) Daily reports as per the format indicated in table -2 below for the SPS shall be Presented to Municipal council, Bikaner every week.

d) In case of any unit of STP/SPS is non functional after giving a Notice by the Employer, the penalty will be imposed as follows:

- i) For 7 days 5000/-Rs.
- ii) For next 7 days 5000/-Rs. plus O&M cost per day.
- iii) Further failure Point no-2 plus Risk and Cost of Contractor

Table :2

Operation of sewage pumps at vallabh Garden , SPS

Details	Pump -1		Pump 2		Pump-3		Remark
	Time	Power reading	Time	Power reading	Time	Power reading	
Start							
Stop							
Start							
stop							

Note: If any pumps is out of Service due to Maintenance or any other reason than the same is to be indicated in the table as " Not Available".

3.3) Electrical Power bill will be paid by Municipal council, Bikaner during Operation & Maintenance period.

3.4) The contractor shall submit to municipal Council, Bikaner every month details of following which will also include the man power requirement and cost.

- a) Report on preventive maintenance carried out.
- b) Report on maintenance carried out due to equipment /system failure.
- c) Report on delay in maintenance due to non availability of Man Power, spare parts, tools, chemicals, consumables, etc.
- d) Report on instrument failure.

e) Chemical & consumables used.

f) D.G set operation

g) Quantity of screened material removed.

h) Quantity of Grit removed.

3.5) The contractor shall provide necessary set of minimal safety equipment required for regular operation & maintenance such as safety gloves ,helmets ,safety harness , life jackets ,gum boots, overalls etc.

3.6) The cost of fuel for DG set and other necessary work will be borne by the contractor.

4. Energy Audit

The operator shall take all necessary measures to minimize the power consumption in carry out its operations .The energy audit operations shall include, but not be limited to the following.

- a) Reducing electricity consumption by regulating pumping through suitable modifications to the operating schedules.
- b) Maintaining power factor and demand to avoid penalty.
- c) Installing more efficient pumping equipment and following better maintenance practices for electrical installation.

5. Repairs and Maintenance (in STP & SPS)

The contractor shall carry out preventive maintenance and break down maintenance operation for proper upkeep of plant in accordance with good practices. The following items shall include in such maintenances.

- i) Sewage pumping station
 - .. De- silting of wet well at least twice a year & disposing silt.
 - .. Replacing damage pipes, fittings & Valves.
 - .. Replacing damage level indicator
 - .. Replacing damage lighting conductor
 - .. Replacing damaged lighting conductor
 - .. Replacing ladders and waterproofing of leaking roof /dry well.
- ii) Pumping Machinery & treatment plant equipment.
 - .. Repairing & replacing motor
 - .. Repairing & replacing damage pipes, fitting and valves.
 - .. Repairing & replacing starter's circuit breaker, capacitor
 - .. Repairing and replacing transformer including cables (HT/LT)

- iii) Building & civil structures
 - .. Water proofing leaking roofs of the buildings
 - .. The preventive and routine maintenance shall include all repairs and provision of spares material & tools required for these repair .The contractors shall also carry out the break down maintenance and repairs. The labor, tools and plant spares shall be arranged by the contractor. The following spares shall be the respective responsibility of the contractor & the authority during preventive routing and breakdown maintenance.

In General Just for Information:

1. Raw Sewage Quality

1.1 The Characteristics of raw sewage are summarized below:

a) Maximum BOD	545mg/l
b) Minimum BOD	185mg/l
c) Maximum SS	520mg/l
d) Minimum SS	330mg/l
e) pH	7.2 to 8.0

2. Trement Plant Performance

2.1) The inlet chamber and distribution box are to be designed for 135MLD i.e. ultimate peak flow in the year 2034. The preliminary units (viz. the coarse & fine screen chambers, the grit chambers & flow measurement unit) are to designed for 45MLD. Three Modules of 20MLd capacity Waste stabilization ponds are to be provided to cater to the ultimate average flow of 60MLD in the year2034. Under this contract only one module to treat an average flow of 20MLD is to be constructed .The treated sewage quality at the design flow rate shall be as given below.

a) BOD at 27 C effluent	= 100mg/L
c) Suspended Solid	=100mg/L

3. Incoming Flow and Levels

3.1 A 1600mm Dia. R.C.C pipe will carry an average sewage flow of 52.036 MLD and a peak sewage flow of 117.81 MLD to the STP site in the year 2034. In this stage the pipe will carry an average flow of 20MLD and a peak flow of 45MLD and the same will be 213.736 for a flow of 117.81MLD.

a) Invert Level of the incoming 1600mmDia. Outfall sewer at the Junction point

With the inlet Chamber 212.600m

b) Top water level in the existing sewage collection is to be disposed of 206.230m.

PROCESS DESCRIPTION

- 1. The Proposed sewage treatment plant (STP) at Bikaner will be in the form of waste stabilization pond system and designed to treat an average sewage flow of 20MLD and peak flow of 45 MLD.**
- 2. The preliminary units for coarse and fine screen, degritting and flow measurement channel & subsequent distribution chamber will be designed to handle 45MLD sewage flow.**
- 3. The plant will consist of three modules of anaerobic pond each dealing with 6.67 MLD average flow & 15MLD peak flow and two modules of facultative pond each dealing with 10MLD average flow & 22.50 MLD peak flow.**
- 4. The ultimate peak flow will be 135MLD and same will be flow by gravity to STP through R.C.C pipes of 1600mm dia.**

5. PRELIMINARY UNITS.

- 5.1 Most of the raw sewage will flow by gravity and about ten percent will be pumped from the proposed sewage pumping station (SPS) to the inlet chamber of STP.**
- 5.2 The sewage flow from inlet chamber will then be equally divided into three flows each of 45MLD in a distribution chamber. In the present stage only 45 MLD will be treated.**
- 5.3 After the distribution chamber the raw sewage will then pass through manually cleaned screen for removing coarse solids. Then sewage will flow through two mechanically cleaned fine screens each to deal with a flow 45MLD.**
- 5.4 The screens will be followed by the grit chambers to remove grit with size .15mm and with a specific gravity of 2.8 .There will be two grit chambers each to cater to 45MLD flow.**

5.5 The degritted sewage will then flow over the out let wear of the grit chamber into a flow measurement channel .At the ends of this channel a weir will be provided to measure the flow . No instrumentation is proposed .Instead a scale will be fixed on the wall of the channel to indicate head over the weir .After the measurement the flow will be equally divided into three equal streams with the help of distribution box.

6. PONDS (LAGOONS)

6.1 Anaerobic Ponds

- 6.1.1 The equally distributed sewage flow will then pass through 3nos. 450mm dia. C.I pipe three anaerobic ponds each designed to deal with 6.67MLD average sewage flow. The inlet pipe will extended up to one fourth the length of pond.
- 6.1.2 The length and width of the anaerobic pond will be 96m and 35m at the mid – liquid –depth level. Sewage will be detained for about 2.02days. The BOD & SS removal is expected to be 50 per cent & 60 per cent respectively.
- 6.1.3 The anaerobic ally treated sewage will then flow over a weir into an outlet chamber in case of the central anaerobic pond there will be two let chambers. Each of these outlets connected to one of the facultative pond by C.I pipes of 350mm dia.
- 6.1.4 The sewage will then flow to facultative pond .Each of other two anaerobic ponds will be connected to a facultative pond by C.I pipes of 450mm dia.

6.2 Facultative Ponds

- 6.2.1 Two facultative ponds each to deal with an average flow of 10MLD will be constructed. Sewage will flow into this pond through two C.I .Pipes of 450mmm & 350mm dia. The inlet pipe will extend up to one –fourth the length of the pond.
- 6.2.2 The length and width of facultative pond will be 400mx135m at mid – liquid depth level. Sewage will be detained for about 10.61days .The BOD & SS removal is expected to be 50 per cent.
- 6.2.3 The treated will then flow over a weir into outlet chamber.

7. Final Disposal

7.1 The treated sewage will then flow through 1200, 1400 & 1600mm dia. R.C.C NP2 class pipe to the existing sewage collection pond.

7.2 The nearby farmers will continue to use the treated sewage for irrigation.

8. Sewage Pumping station

8.1 Three nos. of 18.5 KW Submersible pumps is installed behind the Nagnechiji Temple, at Sudershna Nagar with discharge capacity of 285 m³/H. Pump head 13 meter. Note that two nos. are in a working mode & one in standby mode it means two will work at same time.



Municipal Corporation ,Bikaner.

Name of Work :- Invitation of EOI (Two stage/ Two Cover system) for the Operation and Maintenance work of 20 MLD, STP & SPS situated at Vallabh Garden Area, Bikaner.

Name of Contractor :-

Financial Bid

Date of Sales 20.01.2015 to 27.01.2015	Date of Receipting 28.01.2015	Date of Opening of Financial Bid : 06.02.2015
Earnest Money Cheque Draft No. :	Date :	
Earnest Money M.C.B. Receipt No. :	Date :	
Earnest Fees M.C.B. Receipt No. :	Date :	

“H” Schedule

S. No.	Item	Period	Rate to be quoted by bidder (Per month)	Amount
1.	Operation & maintenance of Sewage pumping station & Sewage treatment plant along with Mechanical, Electrical & Civil works including all T & P testing of raw & treated sewage at lab., cost of consumable of chemicals & fuels etc. including spare parts, Technical & non technical staff with all taxes, statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge			
TOTAL AMOUNT :-				

**Executive Engineer,
Municipal Corporation,
Bikaner.**

Signature of Tendering Contractor

FINANCIAL BID

Name of work : Operation & maintenance of sewage pumping station & Sewage Treatment Plant at Vallabh, Garden Bikaner for Two years

Sr. No	Description of Items	Unit	Quantity
1.	Operation & maintenance of Sewage pumping station & Sewage treatment plant along with Mechanical, Electrical & Civil works including all T & P testing of raw & treated sewage at lab., cost of consumable of chemicals & fuels etc. including spare parts, Technical & non technical staff with all taxes, statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge		
a)	First year	Per month	12 month
	Unit rate in figure:		
	Unit rate in words :		
b)	Second year	Per month	12 month
	Unit rate in figure:		
	Unit rate in words :		

Note: The quoted price shall be including all taxes & duties.

Signature of bidder
With Seal

Executive Engineer
Municipal Corporation Bikaner

Commissioner
Municipal Corporation, Bikaner

Operation & Maintenance of 20MLD capacity Sewage treatment Plant & sewage pumping station at Vallabh Garden, Bikaner including Civil, Mechanical & Electrical Works.

BILL OF QUANTITIES FOR OPERATION & MAINTENANCE WORKS

Sr. No	Items	Unit	Qty.	Unit Rates		Total Amount (in Rs)
1.	Operation & Maintenance for first year.			In figures	In words	
1.1	Sewage treatment Plant. : Operation & maintenance of Sewage treatment plant along with Mechanical, Electrical & Civil works including all T & P testing of raw & treated sewage at lab., cost of consumable of chemicals & fuels etc. including spare parts, Technical & non technical staff with all taxes, statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge					
1.2	Sewage Pumping station :Operation & maintenance of Sewage pumping station along with Mechanical, Electrical & Civil works including all cost of spare parts & fuels, Technical & non technical staff with all taxes, statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge					
2.	Operation & Maintenance for second year.					
2.1	Sewage treatment Plant. : Operation & maintenance of Sewage treatment plant along with Mechanical, Electrical & Civil works including all T & P testing of raw & treated sewage at lab., cost of consumable of chemicals & fuels etc. including spare parts, Technical & non technical staff with all taxes, statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge					
2.2	Sewage Pumping station :Operation & maintenance of Sewage pumping station along with Mechanical, Electrical & Civil works including all cost of spare parts & fuels, Technical & non technical staff with all taxes,					

	statutory dues, safety appliances etc. complete in all respect and as per the direction of Engineer –in charge					
					TOTAL Rs. =	

Note: Operation & Maintenance shall be as specified in section –V and includes all works.

**Signature of bidder
With Seal**

**Executive Engineer
Municipal Corporation Bikaner**

**Commissioner
Municipal Corporation, Bikaner**