

# RAJKOT MUNICIPAL CORPORATION

e-Tender No.: RMC/2024/WW/25MLD WTP/NYARI



**TENDER DOCUMENTS FOR  
ENGINEERING, PROCUREMENT, CONSTRUCTION, COMMISSIONING AND 2 YEARS  
OPERATION & COMPREHENSIVE MAINTENANCE OF 25MLD CAPACITY WATER TREATMENT  
PLANT AT EXISTING NYARI WTP SITE, RAJKOT.**

**VOLUME-III  
FORMS OF PROPOSAL and  
SCHEDULES**

**JANUARY - 2024**

:: Milestone dates of e-Tendering ::	
1 Downloading of e-Tender documents	29-01-2024 to 19-02-2024 up to 17.00 Hrs.
2 Pre-bid Meeting (Queries also to be submitted by e-mail ID <a href="mailto:kpdehariya@rmc.gov.in">kpdehariya@rmc.gov.in</a> & <a href="mailto:sbchhaiya@rmc.gov.in">sbchhaiya@rmc.gov.in</a> before 13-02-2024 up to 13:00 Hrs.)	13-02-2024 at 11.00 Hrs. at Central Zone Office -RMC
3. Online submission of e-Tender	19-02-2024 up to 18.00 Hrs.
4. Physical submission of EMD, Tender fee, Documents required for pre-qualification and other necessary documents.	20-02-2024 up to 18.00 Hrs.
5. Verification of submitted documents (EMD, Tender fee, Documents required for pre- qualification and other Necessary documents.)	23-02-2024 at 10.30 Hours onwards
6. Opening of online Primary Bid (Technical Bid)	21-02-2024 at 10.30 Hrs. onwards
7. Opening of online Commercial Bid (Price Bid) for technically qualified bidders only.	26-02-2024 at 10.30 Hrs. onwards (If possible)
8. Bid Validity	180 Days



413, TrinityCyygnus, Nr. Someswar  
BRTS Junction, University Road, Vesu  
Surat – 395009 (Gujarat – India)  
Tel: +91 261 2974000 / 2974111  
E-mail: [sapient\\_srt@sapient.net.in](mailto:sapient_srt@sapient.net.in)

**Add. City Engineer [CZ],  
Water Works (Projects),  
Rajkot Municipal Corporation, Central Zone  
Dr. Ambedkar Bhavan, Dhebarbhai Road  
Rajkot-360 001.  
Tel.: +91 97145 03709**

## INDEX

Sr. No.	Particulars
1.0	Form of Technical Proposal
2.0	Appendix to Technical Proposal
3.0	Schedule – I to V
4.0	Technical Data Sheet – Process and Mechanical Equipment
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7.0	Guarantee Statement

# **FORMS OF PROPOSALS AND APPENDICES**

Forms of Technical Proposal

Name of Contract:  
Contract No:

To:  
**The Municipal Commissioner,  
Rajkot Municipal Corporation,**  
Central Zone, Dr. Ambedakar Bhavan,  
Dhebarbhai Road, Rajkot-360 001.

Sir,

We have examined the Conditions of Contract, Employer's Requirements, Schedules, Addenda Nos. \_\_\_\_\_ and the matters set out in the Appendix hereto. We have understood and checked these documents and have not found any errors in them. We accordingly offer to design, execute, commission and to comprehensively maintain for one year the said Works and remedy any defects, fit for purpose in conformity with these documents and the enclosed Proposal.

We further undertake, if invited to do so by you, and at our own cost, to attend a clarification meeting at a place of your choice, for the purpose of reviewing our Technical Proposal and duly noting all amendments and additions thereto, and noting omissions therefrom that you may require, and to submit a supplementary price proposal if the amendments, additions and omissions that you require would alter our price proposal as submitted with our bid.

We are,  
Yours faithfully

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_  
duly authorized to  
sign bids for and on behalf of

\_\_\_\_\_  
Name  
Designation

Address  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone :  
Fax :  
Email :

**Appendix to Technical Proposal  
Conditions of Contract**

Employer's name and address	<b>The Municipal Commissioner,</b> Rajkot Municipal Corporation (RMC), Central Zonal Office, Dr. Ambedkar Bhavan, Rajkot-360 001, Gujarat (INDIA).
Contractor's name and address	_____ _____ _____ _____
Phone No. :	
Fax No. :	
E-mail :	
Time for notice to commence	7 Days
Name and address of the Employer's Representative/Engineer	To be nominated by Employer at the time of Award of Contract
Time for Completion of construction of Works	<b>18</b> months including monsoon period and 3 months successful trial run and acceptance of plant
Defects liability period	<b>12</b> months after commissioning and issue of certificate for completion
Period for O & M Contract	Two years from the date of issue of certificate for completion / taking over certificate
Language for communications	English / Gujarati
Electronic transmission systems	
Confidential Details	_____ _____ _____ _____
Currency of all payments	Indian Rupees
Amount of insurance for work	Total cost of work
Amount of third party insurance	As per law per occurrence, number of occurrences: Up to Defect Liability Period

Periods for submission of insurance	Up to contract period till completion of O&M
Evidence of insurance	30 days from commencement date
Relevant policies	60 days -do-
Number of members of Arbitral Tribunal	} As per the Arbitration and Conciliation Act 1996, India.
Members of Dispute Adjudication Board (if not agreed) to be nominated by	
Arbitration rules	
Language of arbitration	English / Gujarati
Place of arbitration	Rajkot
Procedural Law	Indian as governed by the Arbitration and Conciliation Act, 1996, India.
Limit of Retention Money	10 % of the construction contract price. (5 % S.D. + 5 % to be recovered from bill)
Payments in Local Currencies	In Indian Rupees
Time for access to the Site	Within 15 days from the date of Letter of Work Order Acceptance / Letter of Intent
Amount of performance security	5% of contract price
Damages for delay	0.1% per day with limit as 10% of the Construction Contract Price
Deductions of Labour Cess	: 1% of contract price for construction workers welfare fund from all R. A. Bills & final Bill.
Deductions of Income Tax	: % as applicable of contract price from all R.A. Bills & final Bill.
Deductions of Material Testing Expenses.	: The material testing fee at the rate of 0.5% shall be deducted from every running bill of the contractor.

# **SCHEDULES**

## CONTENTS

<b>Sr. No.</b>	<b>Particulars</b>
1.0	Schedule – I : Deviation from Technical Specifications
2.0	Schedule – II : Deviations from Conditions of Contract
3.0	Schedule – III : Work Schedule
4.0	Schedule – IV : Sub-Contractors
5.0	Schedule – V : Project Execution Plan



## SCHEDULE - I

### DEVIATIONS FROM TECHNICAL SPECIFICATIONS

All deviations from Technical Specifications shall be filled in by the Bidder clause by clause in this Schedule. If deviations are discussed in the covering letter, then reference to the letter shall be made below:

Specification No.	Item (or Clause)	Deviation	Covering Letter Item	Price Tag in Rupees + or -
1	2	3	4	5

The bidder hereby certifies that the above mentioned are the only deviations from Technical Specifications of the Bid.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
NAME

\_\_\_\_\_  
DESIGNATION

\_\_\_\_\_  
COMPANY

\_\_\_\_\_  
DATE

COMPANY SEAL

**SCHEDULE - II**

**DEVIATIONS FROM CONDITIONS OF CONTRACT**

All deviations from the Conditions of Contract (Part I - General Conditions and Part II - Conditions of Particular Application) shall be filled in by the Bidder clause by clause in this Schedule. If deviations are discussed in the covering letter, then reference to the letter shall be made below:

<b>Item (or clause)</b>	<b>Covering Letter Item</b>	<b>Deviations</b>	<b>Price Tag in Rupees + or -</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

The Bidder hereby certifies that the above mentioned are the only deviations from the Conditions of Contract.

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
NAME

\_\_\_\_\_  
DESIGNATION

\_\_\_\_\_  
COMPANY

\_\_\_\_\_  
DATE

COMPANY SEAL

**SCHEDULE - III**

**WORK SCHEDULE**

The Bidder shall submit the following after award of work in sufficient details (Separate Sheets) for evaluation ensuring to execute it within the Time of Completion.

**1.0 Construction Schedule**

1.1 This shall consist of a detailed bar chart showing in sufficient details completion of various sections of Work and the date and order in which the Bidder proposes to carry out different parts of the Works. The bar chart shall indicate the principal quantities of work forecast for execution monthly and payments expected to be made in connection therewith. In preparation of the programme, appropriate allowance should be made for loss of time due to inclement weather. This construction schedule shall form the basis for preparation of detailed CPM schedule to be furnished after the award of the Contract.

The Bidder shall keep above in view while preparing his Work Schedule.

**2.0 Employment Schedule**

This shall consist of a chart showing deployment of monthly manpower (including skilled and unskilled labour of various categories) commensurate with the Construction Schedule.

**3.0 Equipment Use Schedule**

This shall consist of a chart showing monthly deployment of equipment (under various categories) commensurate with the Construction Schedule.

\_\_\_\_\_  
SIGNATURE  
\_\_\_\_\_  
NAME  
\_\_\_\_\_  
DESIGNATION  
\_\_\_\_\_  
COMPANY  
\_\_\_\_\_  
DATE

COMPANY SEAL

**SCHEDULE - IV**

**SUB CONTRACTORS**

The bidder shall enter in this Schedule, a list of the sections and appropriate value of the work for which he proposes to use sub-contractors, together with the names and addresses of the proposed subcontractors. The bidder shall also enter a statement of similar works previously executed by the proposed subcontractors, including description, location and value of work, year completed, and name and address of the Employer/Engineer. Notwithstanding such information the bidder, if awarded the Contract, shall remain entirely and solely responsible for the satisfactory completion of the Works.

<b>Element of Work</b>	<b>Approximate Value</b>	<b>Name &amp; Address of Subcontractor</b>	<b>Statement of Similar works Previously Executed by the Sub Contractor</b>	<b>Location &amp; Value of similar Works executed</b>	<b>Name of the Employer</b>	<b>Year completed</b>

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
NAME

\_\_\_\_\_  
DESIGNATION

\_\_\_\_\_  
COMPANY

\_\_\_\_\_  
DATE

COMPANY SEAL

## SCHEDULE V

### PROJECT EXECUTION PLAN (PEP)

The Bidder is required to furnish Project Execution Plan (PEP) in the following format after award of work. A brief but clear PEP is required for describing planning and programming of the works.

- a) **Project Strategy:** Outline statement of the organisation and methods to be employed by the applicant to undertake the work.
- b) **Organisation Chart:** Preliminary Organisation Chart indicating relationship between the site management and the head branch office, the on site direct works operations, the sub-contractors, suppliers and the supervising Consulting Engineer.
- c) **Responsibility of Key Personnel:** Identify key personnel with management responsibilities by activity or section of work.
- d) **Quality Management System:** Provide a description of the Quality Assurance / Quality Control System: organization and procedures in use and identify the accreditation authority.
- e) **Project Safety Plan:** Provide a statement outlining the Health and Safety Plan operated by the company.
- f) Contractor shall indicate any permanently established groups within the organisation which would provide specific functions in the execution of the contract.
- g) **Program/Bar Chart** showing major activities.

**Signature**  
**Name**  
**Designation**  
**Company**  
**Date**

# **TECHNICAL DATA SHEETS**

**PROCESS AND MECHANICAL  
EQUIPMENT**

**INLET / STILLING CHAMBER**

No. of Units	
Design Flow	
Maximum Flow (M <sup>3</sup> /Hr.)	
Detention Time at Design Flow (M <sup>3</sup> /Hr.)	
Capacity	
Size (M x M)	
Liquid Depth	
Design F.S.L. (m)	
M.O.C.	
Free Board	
Drain Valve Size (mm)	

**FLASH MIXER**

No. of Units	
Design Flow (M <sup>3</sup> /Hr.)	
Detention Time at Design flow (Minimum)	
MOC	
Size (M x M)	
Liquid Depth	
Free Board	
Drain Valve Size (mm)	
Design F.S.L. (m)	

**CLARIFLOCCULATOR**

Nos.	
Flow through each clariflocculator	
Detention time in Flocculator	
GT Value of mechanical	
Service factor for gear box	
Surface loading in clarifier zone	
Detention time in clarification zone	
Liquid depth	
Size of Clariflocculator	
Free board	
Floor slope	
Weir loading	
Outlet arrangement of the clarified water	
Clarifier bridge width	
Wheel Assembly	
Peripheral speed of Scrapper Arm	
Thickness of scrapper blade	



MOC of Bridge & Scrapper & Flocculator	
Inside finish	
Outside finish	
Platform	
Railing	
Clarifier by-pass gates	
Painting	
Telescopic Bleed valve	
Water flushing connection	

### **RAPID GRAVITY SAND FILTERS**

No. of Filters	
Total Flow	
Design Flow / Filter Bed	
No. of Section in Each Filter	
Internal Dimension of Filter (M x M)	
Size of Filter Beds (m <sup>2</sup> )	
Type of Filter	
Filtration Rate (M <sup>3</sup> /Hr.)	
Maximum Starting Rate (m/h)	
Effective Size of Filter Sand	
Uniformity Coefficient of Filter Sand	
Depth of Filter Sand	
Depth of Graded Support (Gravel)	
Water Depth above Filter Media (Meter)	
Backwash Interval (HRS)	
Total Output between Two Back Wash (M <sup>3</sup> )	
MOC of Nozzles on Floor	
Free Board above Water Level (M)	
Backwash Pipe Size (mm)	
Inlet Pipe Size (mm)	
Outlet Pipe Size (mm)	
Air Inlet Pipe Size (mm)	
Waste Water Outlet Pipe Size (mm)	
Total Waste Water Qty. per Filter Back Wash M <sup>3</sup> )	
Type of Back Wash	
Rate of Air Scouring	
Duration of Air Scouring	
Rate of Back Wash Flow	

Total Back Washing P(Minutes)	
Back Wash Water Velocity through Media (M/Hr.)	
Air Velocity through Media (M/Hr.)	
Filter Valves and Gates (All) Sizes	
Filter Inlet Valve / Gate	
Filter Outlet Valve	
Flow Restrictor Valve	
Back Wash Inlet Valve	
Wash Water Drain Valve / Gate	
Air Inlet Valve	
Filter Drain Valve	
Under Drain System – Type	
No. of Nozzles	
Make and Type of Valve and Gate Actuators	
Make and Type of Loss of Head and Rate of Flow Indicators	

**AIR SCOUR BLOWER**

Nos.	
Type	
Capacity (NM <sup>3</sup> /Hr.)	
Head (MWC)	
Details of Acoustic Insulation	
MOC	
Shaft	
Lobes	
Casing	
Side Plates and any other parts	
Gears	
Base Frame	
RPM of Blower	
Motor HP and RPM	

**BACKWASH WATER OVERHEAD TANK**

No.	
MOC	
Dimension	
Capacity, effective (M3)	

Location	
Elevation of Invert Level from floor (M)	

**POST CHLORINATION TANK (CCT)**

No.	
MOC	
Dimension, m x m	
Capacity, effective (M3)	
Detention time, min.	
Dosing rate, ppm	

**BACKWASH WATER PUMP**

No.	
Type	
Make	
Location	
Capacity (M3/Hr.)	
Head (MWC)	
Pump Efficiency	
Maximum Size of solid handle	
Shut off Head	
Pump input KW	
MOC	
Shaft	
Impeller	
Casing	
Motor HP/RPM	
Flow meter for back wash line	
Range of Flow meter (M3/Hr.)	

**CHLORINATORS (PRE AND POST)**

No. of Pre-Chlorinator	
No. of Post-Chlorinator	
Capacity of Pre-Chlorinator (kg/hr.)	
Capacity of Post-chlorinator (kg/hr.)	
Type	
Make	
MOC of Chlorinator	
MOC of Chlorinator Gas Line	
MOC of Chlorine Solution Line	
Diameter of Chlorine Solution Line	
Accessories for Chlorinators	
Control Unit	

Vacuum Regulator	
Ton. Container Adapter	
Injector	
Vacuum and Vent Tubing	

**PRE-CHLORINE BOOSTER PUMP**

No.	
Type	
Capacity (M <sup>3</sup> /Hr.)	
Head (MWC)	
Pump Efficiency	
Pump Input (kW)	
Rating of Motor (kW)	

**POST-CHLORINE BOOSTER PUMP**

No.	
Type	
Capacity (M <sup>3</sup> /Hr.)	
Head (MWC)	
Pump Efficiency	
Pump Input (kW)	
Rating of Motor (kW)	

**PAC / ALUM SOLUTION (DOSING) TANK**

No.	
Size	
Capacity (M <sup>3</sup> )	
MOC	
Internal Lining	
MOC of Agitator	
RPM of Agitator	
Make of Agitator	
Rating of Agitator (kW)	

**DIRTY WATER SUMP AND PUMPS**

No.	
MOC	
Dimension	
Capacity, effective (M3)	

Location	
Elevation of Invert Level from floor (M)	
Size of Pump House	
<b>Pumps</b>	
Qty.	
Type	
Make	
Capacity (M3/Hr.)	
Head (MWC)	
Pump Efficiency	
Maximum Size of solid handle	
Pump input KW	
Motor KW/RPM	

**CHEMICAL CUM ADMINISTRATION BUILDING**

Ground floor carpet area (Min.)	
Ground Floor clear height (Min.)	
First floor carpet area (Min.)	
First Floor clear height (Min.)	
Size	

**CHLORINATION ROOM**

Size of Chlorination Room	
Height of room	
Size of Tonner Room	
No. of Tonners	
Capacity of each tonners	
Capacity of Hoist	

**AIR BLOWER ROOM**

Floor carpet area (Min.)	
Floor clear height (Min.)	
Size	



# **GUARANTEE STATEMENT**

### Schedule of Performance Guarantees

**Table-I: Plant Output Water Quality**

Sr. No.	Name of Unit	Parameter	Unit	Guaranteed Figure	
				24 Hours Average	Any Instant
1.	Clariflocculator	Outlet water Turbidity	NTU		
2.	Clarifloccualtor Outlet / Filter Inlet Channel	Residual Chlorine	mg/lit		
3.	Filter outlet / Existing UGSR Inlet (Disposal Point)	Turbidity	NTU		
4.	Filter outlet / Existing UGSR Inlet (Disposal Point)	Residual Chlorine	mg/lit		
5.	Filter outlet / Existing UGSR Inlet (Disposal Point)	Colour	Pt-Co Scale		
6.	Filter outlet / Existing UGSR Inlet (Disposal Point)	pH	-		
7.	Filter outlet / Existing UGSR Inlet (Disposal Point)	Fecal Coliform Organism	-		

**Table-II: Plant Output**

S. No.	Name of Unit	Parameter	Unit	Guaranteed Figure
1.	Input of Plant	Max. Raw input water requirement to give 25MLD output with guaranteed quality	M <sup>3</sup> /hr.	
2.	Clariflocculator	Maximum Continuous output from each unit meeting Guaranteed quality	M <sup>3</sup> /hr.	
3.	Filter	Minimum filter run period between two back wash, any time in the year	Hrs.	
4.	Filter	Maximum Continuous output from each filter meeting Guaranteed quality	M <sup>3</sup> /hr.	
5.	Pre Chlorinator	Maximum Continuous output from each chlorinator	Kg/hr.	
6.	Post Chlorinator	Maximum Continuous output from each chlorinator	Kg/hr.	



**Table III: Chemical Consumption (Guaranteed)**

<b>Chemical Description</b>	<b>Units</b>	<b>Qty.</b>
Chlorine (Pre-Chlorination)	Mg/l	
	Kg/MLD	
Chlorine (Post-Chlorination)	Mg/l	
	Kg/MLD	
PAC / Alum	Kg/Day	
	Kg/MLD	
Other Chemicals (if any)		