

KALINDI COLLEGE

TO BE PRINTED ON THE LETTER HEAD OF THE VENDOR AND DULY SIGNED (ENCLOSED IN SEPARATE ENVELOP)

TECHNICAL BID SPECIFICATION

TECHNICAL SPECIFICATION OF RO WITH PRE FILTRATION UNIT DESIGNED AT 2000 PPM TDS

Pure Water through RO:- 2000 LPH

S.No	Item	Scope	Specifications
1	RAW WATER PUMP	To feed the Dual Media Filter at pressure more than 2.0 bars; which is min. Operating pressure for filter.	a) MOC:CI b)Type: Horizontal Centrifugal c) Flow Rate: 5000LPH d) Head: 35m e) Power Required: 1.5KW f) Electricity: 440V, Three Phase g) Cycle:2900rpm h) Make: CRI/ LUBI/GRUNDFOS/WILO i) Quantity: 1 No
2	<u>PRE FILTRATION</u> DMF/MGF	To remove the total suspended solids, dirt, Iron and reduce silt density index which can foul the membranes.	a) Make: Aventura/Pentair b) Material of Construction: FRP c) Diameter: 18inches d) Height: 65inches e) Testing Pressure: 10kg/cm ² f) Opening: Top and bottom g) Quantity: 1 No MULTIPOINT VALVE: Make: PERHAR/Midas, GERMANY a) Material of Construction: Noryl b) Type: Self Operated c) Size: 1.5 inch d) Maximum Flow Rate: 10000LPH e) Working Pressure: 2-4 Bar f) Working: Down- Flow Media: Mixed Bed Sand media consisting of the following i. Gravel ii. Pebbles iii. Quartz Sand iv. Anthracite, Coarse Salix Average Porosity 50 micron Pipelines & Accessories Finolex Pipe of UPVC 10 Bar tested Pressure

3	Dosing system	To dose Antiscalent chemical to prevent scaling on membrane surface and zeroed down the bio fouling.	<ul style="list-style-type: none"> a) MOC: PP b) Type: electronic metering Type Diaphragm Pump c) MOC of Diaphragm : Teflon d) Capacity : 0-6 LPH e) Make: Seiko/ E-Dose/Aster f) Qty: 1No. Storage Tank (Client Scope) <ul style="list-style-type: none"> 1) MOC: PP chemical Grade 2) Capacity: 200 Liters 3) Make: Gang/Syntax 4) Qty: 1No.
4	Micron filter	To Arrest the fine particles up to 05 microns and to avoid chocking on membrane surface by foreign Particles reduce Silt density index level to acceptable level.	Cartridge Filter & Housing Housing:- FRP <ul style="list-style-type: none"> a) Make Pentair/Aqua Pura b) Moc: of Housing :PP c) Length : 20" d) Diameter: 5.5" e) Quantity:2 Nos.
	Cartridge Filter		<ul style="list-style-type: none"> a) Make: K FLO/H2O/MMP b) MOC: Polypropylene sting wound or threaded c) Length:20" d) Diameter:4" e) Quantity:2 Nos f) Micron rating:05,10 Micron
5	High pressure pump Scope	To Feed the Reverse Osmosis Membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery.	MOC: Stainless Steel-304 <ul style="list-style-type: none"> a) Type Vertical Multistage High Pressure b) Flow rate: 8000 liter per hour c) Head: 145 mwc d) Power Required :5HP-3.75KW e) Electrical :440V,Three Phase, 50hz f) Cycle:2900rpm g) Make: CRI/LUBI/WILO h) Qty: 1 No.
6	Ro Membrane	To remove the major parts Of TDS Up to 98% by Reverse Osmosis membrane arranged and designed to give adequate flow and recovery	<ul style="list-style-type: none"> a) Type: Spiral Wounded b) Diameter of membrane :40 Inch c) Length of Membrane:80" d) NO.of Membrane:-4 e) Salt Rejection per membrane:96%-98% f) Make of membrane :CSM/VORNTRON/DOW g) System Recovery-60% h) Membrane flux area:400 Sq. Ft.

7	Ro Membrane Housing	To pack reverse osmosis membrane and Operate at high pressure up to 300 PSI	<ul style="list-style-type: none"> a) MOC: FRP b) Diameter of pressure vessel: 80" c) Length of pressure vessel:40" d) No.of pressure vessel:4 e) No.of membrane per vessel:2 f) Make:Aventura/Pentair/Vellathe g) Position: Horizontal series h) Arrays: Double
8	Automatic Electrical Panel	Automatic control panel is provided as a safety measure for the pump & other electrical items.	<ul style="list-style-type: none"> a) Completer starters, Overload relays, and single phase preventer for pump. b) Voltmeter, Ammeter, MCB's Indicating lights c) Push Buttons d) Rocker Switches for Dozers e) Incomers, Auto Manual Switches f) Automatic Timer with solenoid valve for back washing & flushing.
9	Instrumentation	<ul style="list-style-type: none"> a) Flow meter or Rota meter: to measure the online flow of water b) TDS meter: To measure the online TDS of water c) Low pressure Switch: To protect RO pump from dry running. d) High pressure Switch: To Protect RO pump form back pressure. e)Pressure Gauges: for calculate P for each unit in RO system 	<p>Rota Meter: Qty: 2No.s (Permeate & Reject line) Range: 4.0 cu.m. per hour Make: MMP/FLOW STAR</p> <p>Digital TDS Meter: Qty: 1 No. (Permeate Line) Range 0-500PPm Optional Features: Make: Aster/Vats, India Pressure Switch Qty: 2Nos. (Low & High) Range: 0-450 psi Make: Indfos, India Pressure Gauge: Qty:4 No. Range:0-21bar Dial Gauge: 6 inches Type: Bourdon Make: Mass/Guru, India</p>
10	Plumbing & fitting	--	UPVC/FINOLEX
11	Automation of plant	---	To prevent the entire pump from dry running by providing the water level controller system in the raw water tank and product water tank which will automatically shuts down the RO plant if the raw water tank is empty or the product water tanks get filled. Also provide automatic control panel, solenoid valve & timer switches for fully automatic operation of the plant.

			a) Water level Controller: 1 Nos. b) Solenoid valve c) Auto Timing System d) Automatic Control Panel/ Manually Operated e) Electrical wiring: 1 Lott
12	SKID/ Mounting Frame	----	a) System will be mounted on channel Frame made of SS
13	Auto Flushing System	-----	One: CRI PUMP
14	Online magnetic softener cum conditioner	-----	

“I HEREBY CERTIFY TO ACCEPT THE ABOVE TECHNICAL SPECIFICATION FOR SUPPLY & INSTALLATION OF RO SYSTEM IN THE KALINDI COLLEGE (UNIVERSITY OF DELHI), EAST PATEL NAGAR, NEW DELHI-110085”

“I FURTHER CERTIFY TO PROVIDE THE ABOVE INSTALLATION COVERING A WARRANTY PERIOD OF 2 YEARS.”

Signature of the vendor
With seal

TO BE PRINTED ON THE LETTER HEAD OF THE VENDOR AND DULY SIGNED (ENCLOSED IN SEPARATE ENVELOP)
KALINDI COLLEGE

FINANCIAL BID DOCUMENT

RO SYSTEM WITH PRE FILTRATION UNIT DESIGNED AT 2000PPM TDS

Pure Water through RO:- 2000 LPH

S.No.	Item	Scope	Specifications	Rate
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		recovery	o) System Recovery-60% p) Membrane flux area:400 Sq. Ft.	
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			<p>plant if the raw water tank is empty or the product water tanks get filled. Also provide automatic control panel, solenoid valve & timer switches for fully automatic operation of the plant.</p> <p>f) Water level Controller: 1 Nos. g) Solenoid valve h) Auto Timing System i) Automatic Control Panel/ Manually Operated j) Electrical wiring: 1 Lott</p>	
12	SKID/ Mounting Frame		b) System will be mounted on channel Frame made of SS	
13	Auto Flushing System		One: CRI PUMP	
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TOTAL COST (Rs.) _____ (In Figures) _____ (In words)

AMC (Rs.) _____

Signature of the vendor
With seal