

PREFABRICATED DUAL UTILITY WATER TREATMENT SYSTEM FOR KUNCHANGI



Sl.No	Description of Works	Unit	Qty
1	SS impellar body single or multistage horizontal / vertical centrifugal Raw Water Feed Pumps to RO system complete with CI volute, SS impeller, mechanical seal, TEFC induction motor direct coupled to the pump, base plate with suitable vibration eliminator pads, complete as programmed for sequential manners for emergency & non stop operation and as directed by engineer In – charge. Duty point 5.40 m3/hr at 35 mtr. Head (Make : Kirloskar / Crompton / WILLO or equivalent)	Nos.	2
2	Dual Media Filter to RO system having the dia 700 mm & HOS : 1500 mm charged with layers of Charge media, flow 5400 LPH, M.O.C. : MSRL designed at tested pressure, operating valves, Top & Bottom dished ends, nut bolts, packing gaskets, air release system complete as required for smooth operation & as required by engineer In-charge. Make : Kay-lons/Kon-Tech/TES or equivalent.	Each	1
3	Metering type diaphragm constant flow dosing pump mechanically actuated , Driven by a Solenoid Coil through an electronic circuit which Runs on 220 V, Single Phase , 50 Hz. AC current, complete with foot valve, anti syphon valve, HDPE tank for Antiscallant system capacity –2 to 4 LPH. Make – Kay-lons/Kon-Tech/Milton Roy (Asia LMI) / Oxy or equivalent.	Each	1
4	Metering type diaphragm constant flow dosing pump mechanically actuated , Driven by a Solenoid Coil through an electronic circuit which Runs on 220 V, Single Phase , 50 Hz. AC current, complete with foot valve, anti syphon valve, HDPE tank for pH Booster Dosing System. Capacity –2 to 4 LPH. Make – Kon-Tech, Milton Roy (Asia LMI) / Oxy or equivalent.	Each	1
5	Metering type diaphragm constant flow dosing pump mechanically actuated , Driven by a Solenoid Coil through an electronic circuit which Runs on 220 V, Single Phase , 50 Hz. AC current, complete with foot valve, anti syphon valve, HDPE tank for De-Chlorinator Dosing System. Capacity –2 to 4 LPH. Make – Kon-Tech, Milton Roy (Asia LMI) / Oxy or equivalent.	Each	1
6	Metering type diaphragm constant flow dosing pump mechanically actuated , Driven by a Solenoid Coil through an electronic circuit which Runs on 220 V, Single Phase , 50 Hz. AC current, complete with foot valve, anti syphon valve, HDPE tank for Disinfectant Dosing System. Capacity –2 to 4 LPH. Make – Kay-lons/ Kon-Tech/Milton Roy (Asia LMI) / Oxy or equivalent.	Each	2
7	Fine filtration (5 Micron Cartridge filters) assembly Constructed in ABS plastic casing with cartridges of 5 micron rating. The system is comprised for 5400 LPH flow for fine filtration through cartridge elements made of rechargeable type polypropylene cartridge modules. Make : Kay-lons/Kon-Tech /TES /Aenj /RSRV /BB	Each	1
8	Fine filtration (1 Micron Cartridge filters) assembly Constructed in ABS plastic casing with cartridges of 1 micron rating. The system is comprised for 5400 LPH flow for fine filtration through cartridge elements made of rechargeable type polypropylene cartridge modules. Make : Kay-lons/Kon-Tech /TES /Aenj /RSRV /BB	Each	1
9	Digital Controller type ORPC synchronized to a DUMP will automatically open up & by pass / return the water flow to DUMP tank incase of any unallowable impurity/ reactive Element/agent try to enter in the membrane module.Make : Kay-lons/Kon-Tech or equivalent	Each	1
10	TDS Indication Meter complete with on line reader probe system and accessories as required smooth operation & Satisfaction of Engineer- in – charge. Make – Kay-lons/Kon-Tech/ aenj /RSRV / Instronix or equivalent.	Each	2
11	RO Membrane modules system of RO application comprising of Membrane made from polyamide fiber, thin film spiral wound based complete with interconnections of suitable size for Dia - 8 inch, Length 40 inch. RO housing vessel made from fiber re-inforced plastic to withstand high pressure. The system shall be skid mounted made of MS channel/Angles. Make : Kay-lons/Kon-Tech / Hydranautics/RSRV or equv (Capacity : 3500 LPH)	Each	1

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12	Latest technology MIMIC based dual operation type controller system comprised with reputed switch gear system, operative on Board display concept and self speaking logic programmed MCC Panel suitable for operation of entire plant runs on 415 volts, 3 phase, 50 HZ, Power distribution & control system. The panel shall be free standing/wall mounting type, made of 14 gauge CRC sheet, Dust and vermin proof with cupric / aluminium bus bar with earth bus bar to be provided to the panel. The incoming & out going feeder shall be accommodated in a modular multitier arrangement. Adequate size cable alley shall be provided for each cable bending & termination. The MCC shall be of self speaking complete after adjustment & control indications, system operation and control show, fault alarm with acceptance correction switch with censure controls for Automatic/manual / Emergency/ By Pass supply. The system shall be comprised for the smooth operation of entire plant as per direction & satisfaction of Engineer In-Charge. Make : Kon-Tech/ kay-Ions/Siemens/L&T/Delta/ABB or equivalent.	Each	1
13	Hydropneumatic system type presure bossting system for RO water supply to drinking water station automatically controlled by a control divice and presure control system. The system should be compprised with one working and one standby boosting pumps and one number of anticrossive presure tank. (Make.. Kay-Ions / Kirloskar/Grund Fos or equiv.)	Each	1
14	Multistage vertical centrifugal type High Pressure Pump programmed for sequential manners for emergency / nonstop operation M.O.C. : Non-Megnatic Stainless Steel, CI Volute, SS shaft, non carbonic mechanical seal, TEFC induction motor runs on 415 volts, 50 HZ, III phase, 2900 RPM,direct coupled to the pump, base frame with suitable vibration eliminating pads, complete as directed for 9900 LPH flow, 140 mtr. Working head. Make : Willo/Grund fos/ Kirloskar/Kay-Ions/Kon-Tech or eqv..	Each	2
15	pH indication cum meter complete with on line reader probe system and accessories as required smooth operation & Satisfaction of engineer in – charge. Make Kay-Ions/Kon-Tech/ aenj /RSRV / Instronix or equivalent.	Each	1
16	CIP Unit to be incorporated for membrane service & cleaning cum flushing purposes. The unit is incorporated for provide a complete & foolproof system for the purpose of onsite service/ flushing/cleaning the plant. The unit shall be supplied with an adequate capacity of chemical holding tank, fine filtration, pumping system, Heating system as required for system servicing at site and as per direction & satisfaction of Engineer In-Charge (Kon-Tech/ Kay-Ions or eqv).	Each	1
17	On line Glass tube type Flow indicators properly fitted for onsite reading of flow of permeate & reject. Properly fitted for smooth operation & as per required at site. Make : Kon-Tech / UKL or equivalent.	Each	5
18	Analog type Stainless steel pressure indicators to show & read the manual on line pressure of low & high pressure water lines complete with accessories as required for smooth operation & proper fitted. Make : H-GURU/ Fie – big or equivalent	Each	10
19	MSRL fabricated priming chambers to be fitted to the suction of feed water & transfer pumps for screening purpose to protect the pumps impeller s from any unwanted/ Solids/ physical impurities & converting the pumps to positive suction comprised for the satisfaction of engineer In-Charge. The systems shall be suitable for 2 nos. of raw water feed pumps. Make : Kon-Tech/Aenj/RSRV or equivalent.	Each	2
20	Air Spurger system required for preparation of brine solution for softener regeneration. The system is to be comprised of twinlube type root air blower comprised with 1 HP, 3 Phase,2900 RPM, 50 Hz. Electrical Motor complete with accessories as required for smooth operation with rain cover and base frame as per instructions of Engineer In-Charge . Make : Kay-Ions/Kon-Tech / Everest or Equivalent.	Each	1
21	Strongly acitic cation exchanger in sodium ions based water softening plant complete with charge media, Brine Tank pipe - fitting & valves as required for smooth operation of the system and thus produce soft water of commercial zero hardness i.e., < 50 mg/l as CaCo3. The softening plant shall be capable of producing following capacity in a period of 6 hours per cycle of 6 hours at 7500 LPH service operation and FRP Pressure Vessel complete with internal distribution and collection system. The vessel shall be tested for a Pressure of 5 Kg/ Sq. cm One initial charge of adequate quantities of cation resin shall be supplied. One HDPE salt saturation tank of capacity about for 50 Kg of salt. Complete with frontal piping line including valves for operation, one set of on site hardness test kit, regeneration and rinsing facility for output from two regenerattions shall be of =50 KL - and shall be as per direction of engineer In-Charge. Make : Kay-Ions/Kon-Tech / Toyota / Aenj or equivalent	Each	1

Sl.No	Description of Works	Unit	Qty
22	Wallmounted Steel structure mounted RO system specially designed & suitable for treatment of raw water quality TDS up to 750 PPM. The RO system complete with rechargeable Micro pore sedimentation cartridge Filter, catalytic charged coco-cartridge filter, RO Modules with water pump, complet with required carbon cartridge post treatment, accessories. The system shall be incorporated for online TDS check dry run protection and pre programmed for smooth operation as required for the satisfaction of engineer in Charge. Make : Kon -Tech/Kay-lon/RSVL/Aenj or Equivalent. Capacity : 50LPH.	Each	2
23	(UPVC) pipes , having thermal stability for hot & cold water supply including all UPVC plain & brass threaded fittings. This includes jointing of pipes & fittings with one step UPVC solvent cement & testing of joints complete as per direction of Engineer in Charge.		
(a)	50 NB	RM	75.73
(b)	40 NB	RM	160.36
(c)	25 NB	RM	63.7
(d)	20 NB	RM	0.25
(e)	12.5 NB	RM	4.10
24	C class MSRL pipe line should be of internally 3 mm thick high pressure compatible neoprene rubberlined complete with fittings like flanges, bends, tee, sockets, reducers, GS mechanisms, nut bolts, supports & grouting arrangement as required for smooth operation of said LFRO water treatment plant with following sizes :-		
(a)	50 NB	RM	10.35
(b)	40 NB	RM	1.90
(c)	25 NB	RM	0.600
25	High quality non toxic transperant PVC flexible Hose pipe having the adequate tensile string re-inforced for pressure line application of following sizes :		
(a)	40 NB	RM	2
(b)	12.5 NB	RM	10
(c)	6 NB	RM	53
26	AGS coupling to interconnect the RO plant Components starts from suction of inlet raw water feed pump to RO water transfer pumps as per following sizes:-		
(a)	50 NB	Nos.	2
(b)	40 NB	Nos.	16
27	Non corrossive metal disc mounted quarter turn internally EPDM/Viton lined tricentric BUTTER FLY valves having the non megnatic steel shaft, taperpin, plug & bushes, PTFE bearings, silicon/viton/neoprin O-rings complete as required for smooth operation of high pressure LFRO water treatment plant line, Make : Bluzac/CR1/B&W/Kon-Tech or Equiv.of following sizes		
(a)	40 NB	Nos.	2
(b)	12.50 NB	Nos.	6
28	Anticorrossive UPVC ball mounted quarter turn internally EPDM/Viton lined tricentric UPVC BALL VALVES having the high quality EPDM shaft with inbuilt taper pin, plug &, silicon/viton/neoprin O-rings complete as required for smooth operation of high pressure LFRO water treatment plant line, Make : Bluzac/B&W/Kon-Tech/Prince or Equiv. of following sizes:-		
(a)	50 NB	Nos.	4

SI.No	Description of Works	Unit	Qty
(b)	40 NB	Nos.	4
(c)	25 NB	Nos.	4
(d)	12.50 NB	Nos.	3
29	Three parts consisting connector nut type FM ends, nut joined UPVC UNION suitable for interchangeable, changing other fittings as required for operation on high pressure & high TDS compatible water line of said system :		
(a)	20 NB	Nos.	4
(b)	12.5 NB	Nos.	2
30	Disc check wafer & compression spring type compact & rugged casted stainless STEEL NON - RETURN VALVE should be of star guided integral body of non-magnetic steel construction and with EPDM/silicon/viton seat, spring loaded circlip disc, as required for smooth operation on high pressure line of said plant by following sizes :-		
(a)	50 NB	Each	2
(b)	40 NB	Each	1
31	Ball check type compact star guided integral body having the high quality EPDM/silicon/viton seat, surface guided check gate, NON - RETURN VALVE OF UPVC as required for smooth operation on high pressure line of said plant with following sizes :-		
(a)	50 NB	Each	3
(b)	40 NB	Each	1
32	Ms supports in angles/iron plates / channels/ beams etc. as per drawings / instructions at site including 2 coats of synthetic enamel paint over a coat of primer	Kg	52.41
33	Non corrosive hand turn long body type metallic 1/2" bib cock of reputed Make for collection of water at drinking water locations (excluding civil work) :	Each	8
34	GM gate valves (Make : Zoloto or Equiv.)		
(a)	40 mm dia GM Gate Valve	Nos	1
(b)	25 mm dia GM Gate Valve	Nos	2
35	Copper conductor multi strand unarmored PVC insulated multi core cables with end terminations for control supply laid in existing PVC conduit / Cable Tray or as per direction of Engineer-In-Charge.(Make: CCI/NICCO / Universal / FINOLEX		
(a)	3C x 10 Sqmm	RM	136
(b)	3C x 6.0 Sqmm	RM	10.10
(c)	3C x 4.0 Sqmm	RM	45
(d)	3C x 2.5 Sqmm	RM	154.20
36	Brass glands and lugs etc. complete for the following cables.		
(a)	4 c x 10 sq.mm.al.ar.cable	Nos.	11
(b)	4 c x 6 sq.mm copper .ar.cable	Nos.	2
(c)	3 c x 4.0 sq.mm copper.ar.cable	Nos.	13
(d)	3 C x 2.5 sqmm cable	Nos.	9
37	GI tray suspended with 8mm threaded type suspension rods and anchored to ceiling with 10mm anchor fasteners including GI tray cover.		
(a)	200 mm x 30 mm	RM	28.3

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(b)	100 mm x 30 mm	RM	39.2
38	Earth strips included excavation and refilling of earth when laid in ground and with all fixing accessories when laid inside the building including all necessary interconnections with earth station and equipments.		
(a)	25 x 5 mm GI flat	RM.	48.20
39	Float Switches for synchronise the water level for auto On-Off control and operation of entire RO Plant.	Each	5
40	Drinking water station suitable for total 6 No of collection taps nicely fitted for back to back water filling and drinking Make : Kay -lons /Kontech or Equiv.	Each	1
41	Aluminium / copper armoured cables in Existing cable trenches / excavated trenches / along the wall / (tray trench depth upto 750 mm-if required)/Cable tray, brickprotection and sand cushioning etc. complete. (from substation to WTP) (Make : CII/NICCO/ Universal/FINOLEX)		
(a)	3.5 c x 85 sq.mm al.ar.cable	RM.	80
42	Provision of end termination with brass glands and lugs etc. Complete for the following cables :-		
(a)	3.5 C x 85 sq.mm. Cable.	Nos.	4
43	Prepolished double side mirror non magnetic stainless steel water storage tanks cylindrical shape grade 304 having the double layers 0.8 mm thick rolled sheets in between 40 mm thick polyurethane sheet for heat resistance drinking water storage tank. The tanks shall be of double seam welded body, machine drawn top and bottom dishes complete with inlet, outlet & drain connectors as required for smooth operation including SS stand complete for the following capacities - Make : Neropure or equivalent.		
(a)	2000 Ltr.	Each	1
44	Supply, Installation, Testing & Commissioning of 125A TP + N 25 KA Change Over Switch fitted in whether proof metal sheet enclosure with seven tank process -	No.	1
45	1) Prefabricated MS Epoxy Coated water treatment plant room (Porta cabin) of 1.2 mm thick MS Sheet (internally plain fitted with machine screw hexagon head leak proof seal and externally corrugated of 18 mm deep corrugation at 200 pitch longitudinal) for 50 mm thick high quality PU Foam insulation. The MS sheets shall be fitted on hollow pipes steel structure with base of ISMC 100 x 50 suitable for WTP Room (Porta Cabin) having the Size of 5500 mm Long x 2100 Wide and 2100 Height with footprint flooring sheet of 6 mm thick x 3500 long x 1040 mm wide and 12 mm thick 200 x 200 mm foundation plates for grouting and fixed ladder for plant fitment and an extended folding type sun shed of 1500 extended height on 1250 length x 2100 width on said porta cabin (WTP Room). The CIP Tank placement station shall be properly fitted with base support of hollow pipes and top cover of 2 mm thick x 1420 mm x 2220 mm GRP sheet. The porta cabin shall have 2 nos opening for fixing of PU Foam insulated service doors (size 750 mm x 1730) on left and right side and a main door of 910 x 1730 size on front side. Total No. of high quality PU Foam insulated Door openings are 3 nos. A record keeping / tool keeping almirah size (in mm) : 750 long, 370 deep and 250 height and a foldable table size : 890 mm long x 305 wide shall be fabricated inside the Porta cabin. The entire porta cabin shall be suitable for fitting of 3500 LPH capacity RO System, Hydropneumatic System, Air Spurger system and described PU Foam insulation The two coats of anticorrosive Epoxy Paint shall be applied on sand blasted smooth surface and 2 coats of base primer. Make : RSRV / Aenj or Equivellant. MS Epoxy Coated Porta Cabin without PU Foam insulation and Doors. - 1 No 2) 50 mm thick high quality PU Foam with fire retardant treatment made of thermosetting polymers of closed cell structure - 373 Sqft 3) Pre Fabricated doors of 1.2 mm thick inside plain and outside corrugated sheet of 18 mm deep corrugation at 200 pitch longitudinal for 40 mm thick high quality PU Foam insulation. Door size 45 mm thick (Insulated) x 750 mm x 1730 mm. Make : RSRV / Aenj or Equiv - 2 Nos 4) Pre Fabricated doors of 1.2 mm thick inside plain and outside corrugated sheet of 18 mm deep corrugation at 200 pitch longitudinal for 40 mm thick high quality PU Foam insulation. Door Panel size 45 mm thick (Insulated) x 910 mm x 1730 mm. Make : RSRV / Aenj or Equiv - 1 No	No.	1

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	5) Lock Lever Base of MSEC of size : 130 x 40 x 3 mm Thick - 3 Nos		
	6) Fastner / Foundation Bolts (M16 x 150 with Nut) - 2 Nos		
	7) Handle base - 200 x 20 x 3 mm thick - 3 Nos		
	8) Lever for Locking - 12 dia x 190 mm Long - 1 No		
	9) Lifting Hook (16 dia) - 1 No		
	10) Hinges for Puf insulated Doors - 3 Nos		
	11) Hinges for MS Folding Table - 2 Nos		
	12) Galvanised Steel Chain for MS Folding Table (3 mm dia x 640 Long) -		
	13) Fan Hook for Puf Insulated Cabin (150 x 40 x 3 mm Thick) - 2 Nos		
	14) Shock Resistance Rubber Matt (2 Mtr. X 1 Mtr.) - 2 Nos		
	15) Exhaust Fan with Louver (300). Make : Havel -		
	16) Switch Board with Plate (280 x 100 mm) - 1 No		
	17) LED Tube Lights (18 Wt.) - 2 Nos		
	18) Fan Wall Mounted Type (400) - 1 No		
	19) Switches 10 A one Way - 6 Nos		
	20) Cushing Cap 2" - 4 Nos		
	21) GRP Sheet 2 mm thick x 2220 mm x 1420 mm wide - 1 No		
	22) Machine Screw Hexagone Head with Leak Proof Seal (M2 x 20) - 845 Nos.		
46	Supply of consumable items as per actual site requiriement to achieve the desired quality of water for the period at least 6 months till the O&M contract issued to a eligible contractor (The quantities are tentative and there may be variation in quantities. Payment shall be made on actual requirement / consumption :-		
(a)	RO Antiscallant - Lequid	Per Kg.	75
(b)	Sodium Hypochlorite for pre - chlorination & disinfection - Lequid	Per Kg.	120
(c)	pH Booster - Lequid	Per Kg.	100
(d)	De-Chlorinator-Lequid	Per Kg.	100
(e)	Fine Sediment Filter - Cartridge Type	Each	12
(f)	Common Salt for recharge	Per Kg.	10000
(g)	Testing of water for essential tests as per BIS - 10500.	Each	3