



**Project Title: Building Resilience of Flood Affected
Communities in Tehsil Faiz Gunj, District Khairpur Mirs'**



Installation of RO Plant 1000 Litter per Hour complete set with Solar Setup.

Section: 1:

TECHNICAL SPECIFICATIONS

For this quotation maximum water limits are as below.

T.D.S 3000 ppm, PH value 8.50, Hardness 500ppm, Arsenic 10 ppb;

Note: Technical changes are reserved to optimize the performance.

1: Sand media security filter column 13 X 54

For pretreatment of raw water a filtration column unit is installing in the plant;

Model Pentair or Eurotech

Flow capacity M3/hr 4

Rating Micron 10

Media of filtration Quartz 120 kg

Filter vessel material FRP Imported

Max Pressure Bar 6 – 10 bar

Quantity No. 01

Regeneration valve No 01

2: Activated carbon media security filter column 13 x 54

To removal of odor & taste of raw water a column unit is installing in the plant;

Model Pentair or Eurotech

Flow capacity M3/hr 4.5

Rating Micron 10

Media of purification GAC 25 kg

Filter vessel material FRP Imported

Max Pressure Bar 6 – 10 bar

Quantity No. 01

Regeneration valve No 01

3: Big blue jumbo security cartridge filters:

For 1 micron treatment of raw water, big blue jumbo unit is installing in the plant;

Model PPW-SCF-5

Flow capacity M3/hr 4

Rating Micron 5

Filter vessel material ABS food grade Imported

Cartridge Filter material Polypropylene / PD

Max Pressure Bar 6

Quantity No. 02 (Parallel)

4: Chemical Dosing Stations:

To doze Anti-scalant in the feed water prior to entering the high-pressure stage/ R.O. membranes and for pH adjustment on per meter water.

Pump Type: Positive Displacement

Capacity: Min. 5 LPH against 5-7 bar

Power: 220V, 50Hz

Mode of adjustment: Manual

Make: Eurotech or Etatron Italy

Solution tank Capacity: 80 Liters

No. of Systems: 01.

5: Reverse Osmosis type PPW - RO
PP Reverse Osmosis type PPRO 1000 litres / hour

Performance specification

Product Water Output 1 M3/Hr
Feed water Input 3 M3/Hr
Working Pressure: Around 10-16 bar
Feed water TDS 3000ppm maximum
Product water TDS <50ppm
Recovery Up to 55% - 60 %
Design temperature of water Max.28°C

System specifications

Membrane type Spiral Wound: High rejection Thin Film Composite (TFC)
Size of elements 8"x 40"(Dia X Length)
Make: Hydranautics or Filmtec USA
Model: BW30-400or CPA model
Number of elements 8040 - 01
Salt Rejection: 96 to 99.6% depend upon feed water quality
Number of pressure vessels 8040 - 1 membranes casing
Type: Side port, heavy duty
Make: Pall or Eurotech
Material: FRP
Element / pressure vessel 5 (Array 5:7 X 5:5)

6: Feed Pressure Pump

Type Centrifugal Horizontal multistage
Model HVL or CDLF 4-50
Make Hualien Taiwan or CNP
Flow capacity M3/Hr 4
Pressure P.S.I 30 to 50
Motor rating kW single phase, 50Hz
Size (suc x del.) Inch 1.25 x 1
Quantity: No. 01

7: High Pressure Pump

Type Centrifugal Vertical multistage
Model HVL or CDLF 2-15 single phase
Make Hualien Taiwan or CNP
Flow capacity M3/Hr 4
Pressure P.S.I 150 to 225
Motor rating kW 2, 50Hz
Size (suc x del.) Inch 1.25 x 1
Quantity: No. 01

8: MAIN CONTROL PANEL:

Magnet connectors: Fuji Japan or equal
Power Supply 3 phase
SPDT relay for power and signal connections
Colour coded and numbered cabling
Miniature circuit breaker 3phase
Over load relay

On panel Door:

Control on / off buttons
MIMIC diagram (display)
Phase indicators
System control buttons

Indication and alarm lamps
Selector switch for auto or manual operation
Volt, Hz, Amp digital meter

9: Automatic mineral adjustment UF hollow fiber spiral membrane 4040

Automatic mineral adjustment membrane will dose designed minerals to maintain the right mineral percentage in the purified water also maintain PH level & other useful minerals in drinking water;

T.D.S can adjust as per user friendly taste;
Membrane type Spiral Wound: 99.99% of bacteria removal
Size of elements 4"x 40"(Dia X Length)
Make: Pall or Equal
Number of elements 1
Type: Side port, S.S heavy duty casing
Make: Pall or Eurotek

10: Pure & raw water storage tank, made by food grade material

Tank capacity : 500 US gallons
Dimension 3.5` x 6.5" (Dia X Length)
Make: Dura or Pure Pro
Number of ports 4
Material PP or PE food grade certified
Quantity of tanks [1 for raw water & 1 for pure water]

11: Auto start & shut off sensors:

It prevents plant run dry & over flow of pure water;
Installing water sensor inside the tank of raw water & pure water with provision of Electrical panel box to start; stop entire plant automatically;

12: Flow meters:

Using for online water flow
Pure Acrylic material crystal
Cube shape; transparent type with S.S floats inside
1" in & out measuring flow of pure & rejection water online;
2 Pcs mounted on the front of the RO plant

13: TDS monitor 1No:

Using this monitor to measuring TDS of pure water out-put
User can also measure conductivity with this monitor

14: Skid of the plant:

Complete plant will be skid mounted on a heavy duty S.S frame
Using 1 ½" square pipe for entire skid;

15: Piping & fitting accessories

1 lot piping for high pressure line & rejection line included in the package;
1 lot of UPVC SCH 80 pipes & fitting accessories food grade material;
1" pipes, union, elbow etc included in the package;

16: Solar plant for complete R.O water plant electric supply

Complete solar setup with fitting & installation

SECTION 2:

**The total installation will be carried out by vender. CARGO & DELIVERY HANDLING
FREIGHT INCLUDED IN THE PRICE.**

SECTION 3:

INCLUSION DONE BY VENDER

The technical specification

Supervision and installation of the plant provision of civil works plan and foundation loading data

Boring pump with 150 to feet before

Solar electric supply for entire plan five KVA

GURANTEE

The system is the guarantee to be free of defects I the material and work men ship for the period of 12 months from the date of the delivery, if the fault owing to miss handling we could repair if un repeatable the replace the defected parts

Section: 4

PRICE SUMMARY

Price of complete setup 1000 liters / hour complete Solar setup for RO PKR _____

All rates quote including all applicable taxes

DETAILS OF CIVIL WORKS

DETAIL OF FILTRATION PLANT ROOM SIZE (10'X10'X12.0')

Sr.No.	MATERIALS	QTY	UNIT	UNIT RATE	TOTAL COST
1	PCC Concrete	30.250	CFT		
2	Brick Masonry	352.500	CFT		
3	Roof Tile	130.00	SFT		
4	Tear & Guarder	150.000	RFT		
5	Plaster	972.500	SFT		
6	PCC Flooring	100.000	SFT		
7	Tile Work	150.000	SFT		
8	Plumbing Work	1.000	Lumpsum		

Total Amount

DETAIL OF FILTRATION PLANT ROOM SIZE (10'X10'X12.0')

Particulars of item	No.	L	B	H/D	Qty	Unit
Detail of Work		Ft	Ft	Ft		
Plain Concrete Cement (1:4:8)						
PCC	1.00	11.00	11.00	0.25	30.25	CFT
Total PCC					30.25	CFT
Brick Masonary						
Wall Masonary (9")	4.00	10.00	0.75	11.50	345.00	CFT
Shade, Masonary Work	1.00	10.00	3.00	0.25	7.50	CFT
Sub Total					352.50	CFT
Roof Tile						
Roof Tile	1.00	10.00	10.00		100.00	SFT
Shade Tile	1.00	10.00	3.00		30.00	

Sub Total					130.00	SFT
Tear & Guarder						
Guarder	2.00	10.00			20.00	RFT
Tear	10.00	13.00			130.00	RFT
Sub Total					150.00	RFT
Plaster 1:4						
Wall Outer Side	4.00	10.00		12.00	480.00	SFT
Wall Inner Side	4.00	10.00		11.50	460.00	SFT
Shade	1.00	10.00	3.00		30.00	SFT
Shade Front	1.00	10.00	0.25		2.50	SFT
Total Plaster					972.50	SFT
PCC Flooring						
PCC Flooring	1.00	10.00	10.00		100.00	SFT
Total					100.00	SFT
Tile						
Outer Side Tile	1.00	10.00		12.00	120.00	SFT
Outer Side Tile	1.00	10.00	3.00		30.00	
Total					150.00	SFT