

<u>RAW WATER /</u>		<u>D.M.</u>	<u>DESIGNING</u>	<u>M3/Hr</u>	<u>mtr/sec.</u>	<u>mtrs</u>
<u>CLERIFIED WATER</u>		<u>PLANT</u>	<u>Vessels</u>	<u>Flow</u>	<u>Velocity</u>	<u>Vessel dia</u>
				60	15 or 30	0.786
Chemical Anal	ppm		Mechanical Filter		30	
	basis		vessel dia			
pH	7		Free Board-40%			
TDS	451					
Sp.Cond-us/cm	704					
Total Hardnes	205		Activated C. filter		30	1.5
Calcium H.(Ca)	123		123 vessel dia			2.25
Magnesium H.	82		82 Free Board-40%			
						1.6
Chloride(as CL	40		40 vessel dia		Assumed	2.56
Sulphate(as SO	52		52 Weak Cation			dia. Assume.
Silica(as SiO2)	21		21 Strong Cation			
Colloidal Silica.....			Resin Height-€	40.00%		
Phosphate(as			Degasser		70	0.6
Nitrate(as NO3.....			tower dia	Air flow	30	0.36
Nitrite(as NO2.....			Air Blowers	2100		
Fluoride(as F).....			Deg.Tank.	20 mts stay		3
Turbidity			Degger Pump			
Suspended So.....			Anion		30	1.6
COD.			vessel dia		Assumed	2.56
BOD.			Weak Anion			dia. Assume.
Iron(as Fe)	0.3		0.3 Strong Anion			
OPERATING HINTS.			Resin Height-€	40.00%		
[1] fill flow M3/hr			Mixed bed		30	1.2
[2]fill velocity Mtrs/sec.			vessel dia.		Assumed	1.44
[3] Calculate nM3			Cation M.B.		30	Vessel dia
volumes			Resin Height-60%		Assumed	Assumed
[4]Choose ves Mtrs			Anion M.B.		30	
diameters separately			Dmpump			
[5]take 40% hMtrs						
free board and take			STORAGE TANK.			
60% as media height						
prepared by S.C.		BHARADWAJ				

<u>mtr.</u> <u>Media Ht.</u>	<u>mtr.</u> <u>Vessel Ht.</u>	<u>M3</u> <u>Vessel Vol.</u>	<u>M3</u> <u>Media Vol.</u>	<u>Remarks.</u>
	1.6			
				anthracite/sand
3.17	4.43	7.84	2.8	Ac.media in M.T.taken
			5.6	M.F.taken is 2.0
1.42	2.27	4.56	2.85	Indian/Imported
cation resin Ht. by calculations	Mtr by calculations	calculated Taking 60% free board	M3 resin cal. with corrections	calculate volume Resin.strong on 20% Sodium slips from weak.
2	4.2	2.86	2	take calculated
	1.6 times ht. of the media			capacity air blower and
4	4	48	20	deg.tank degasser pump.
1.33	2.13	4.28	2.675	take calculated
anion resin Ht. by calculations	Mtr by calculations	calculated Taking 60% free board	M3 resin cal. with corrections	volume on 20%slips silica slips from weak to strong
1.41	1.13	1.28	1.6	calculate volume
total resin cation	Mtr by calculations	calculated 0.7	0.8	of each based on ionic slips i.e.Na & silica slips from Cation & Anion resin beds.
0.71	Mtr by calculations	calculated Taking 60% free board	taken	Flow and height for pump capacity storage capacity for 24 hours use basis.
		PREPARED BY	S.C.	BHARADWAJ.

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