



# GOVT. DEGREE COLLEGE

AVANIGADDA-521121. KRISHNA DT. (A.P).

NAAC – B



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WINNERS ARE FORGED HERE

## RAIN WATER HARVESTING

### RAINWATER HARVESTING

The rainwater harvesting strengthens the water supply to the campus lakes as well as enhance water level of wells in the campus through ground water recharging process. Small pits with a weep hole placed at regular intervals that are contracted with a brick or stone masonry wall are known as recharge pits. Perforated coverings can be used to cover the pit's top. Filter media ought to be put in the pit's bottom.

The catchment area, the intensity of the rainfall, and the rate of soil recharging may all be used to determine the pit's capacity. Typically, the pit's dimensions range from 1 to 2 metres in width to 2 to 3 metres in depth, depending on the depth of the preceding stratum.

Small dwellings and shallow aquifers can be recharged in these holes.



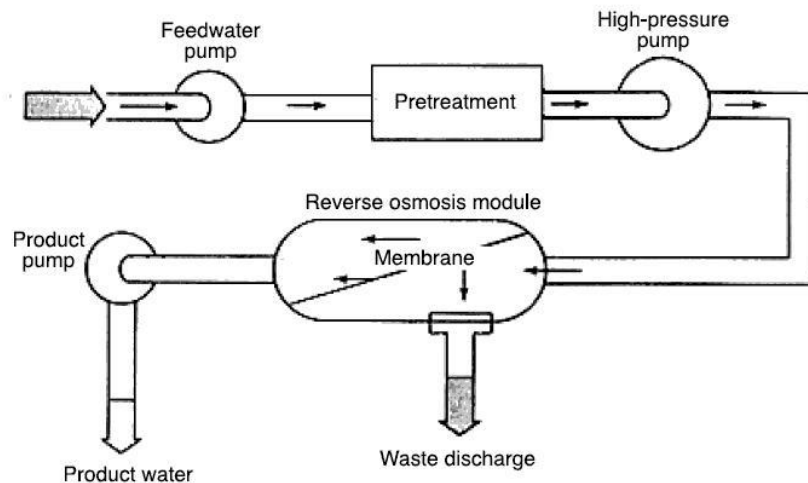
## WATER SUPPLY ON THE CAMPUS

### RO PLANT:

RO plant is provided inside the campus to supply water to the entire campus.

### RO Water Treatment Plant

#### Reverse Osmosis Plant Simple Process

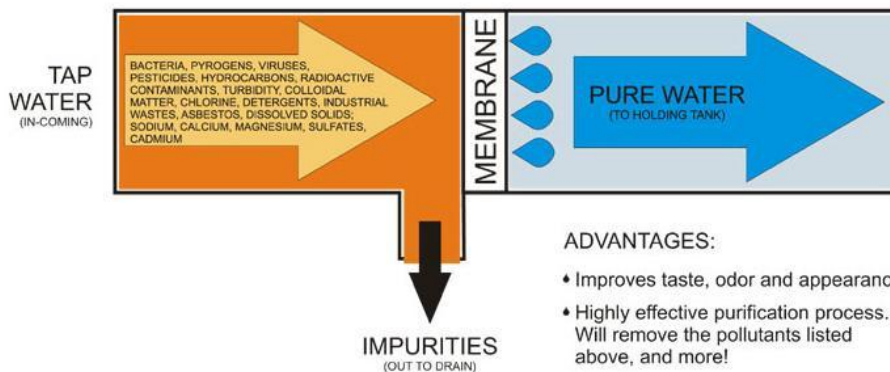


Reverse osmosis RO water treatment plant process is that allows the removal of unwanted particles (salts) from a solution. Reverse Osmosis water treatment plant is also used to treatment of water like removal of hardness, microorganism, salts and impurities in order to improve the color, odour, taste or properties of the fluid.

“Cross flow” is the advanced Reverse Osmosis RO water treatments Technology that allows a partially semi permeable Reverse osmosis RO membrane to clean itself continually. As some of the fluid passes through the membrane, the rest continues downstream, sweeping the rejected species away from it. Reverse Osmosis water treatment plant process requires a HPP (high pressure pump) to push the fluid through the membrane like high pressure and large driving force. For Brackish water approximately 10 to 20 bar applying as a osmotic pressure in solution to separate salt water as rejection and good water as product.

As concentration of the salts (fluid) being rejected increases, so does the driving osmotic force. Reverse Osmosis water treatment system is used to reject, sugar, bacteria, salts, proteins, particles, dyes, and other constituents. Separation of

ions with reverse osmosis water treatment filtration is aided by charged particles. This means that dissolved ions that carry a charge, such as salts, are more likely to be rejected by the membrane. The larger the charge and the particle, the more likely it will be rejected.



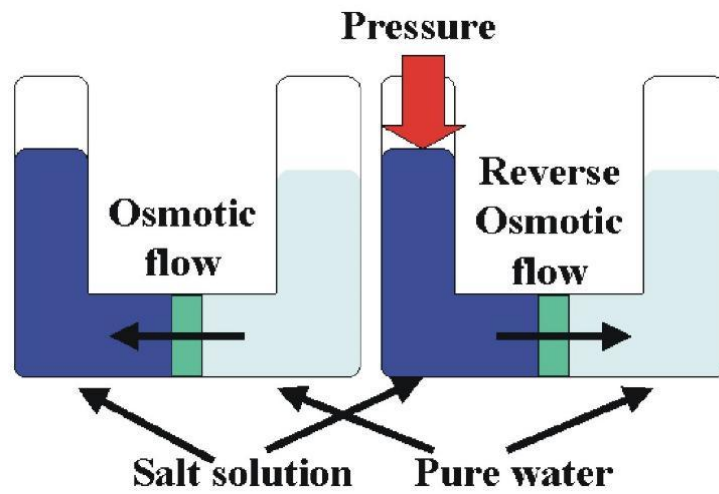
**ADVANTAGES:**

- Improves taste, odor and appearance
- Highly effective purification process. Will remove the pollutants listed above, and more!

**Water Treatment Plant Designs**

- Pre-chlorination: This is made to disinfect the raw water from any infections.
- First Filtration: By the pressure Sand filters to remove Turbidity and Suspended solids.
- De-chlorination dosing: To remove the remaining Chlorine after the pressure sand filter.
- Antiscalent dosing: It is very important to prevent Calcium Sulfate from scaling.
- Acid dosing: It is very important to prevent calcium carbonate from scaling by Sulfuric acid 98%.
- Second filtration: It is by the cartridge filter (5micron) is important to remove any particles exceed 5 micron size.
- Feeding water High TDS raw water will pass through the semi permeable membrane under the high pressure, after boosting with high pressure (Osmotic Pressure ) approx 12 – 16 bar the membrane output water will treated and reduce to the required TDS .

- Adjusting PH value by Sodium hydroxide 49%
- Post chlorination dosing for disinfection by Sodium hydrochloride 12%



**Drinking water facility for Students**

**The waste water generated by RO Plant is being channelized into college garden to grow flowering plants and number of fruits bearing plants.**

## DIVERSION OF RO PLANT WASTE WATER TO PLANTS



డిగ్రీ కళాశాల, అవని.



**Waste water diverted to Plants**

తెజస్వి నావధీతమస్తు  
MAY YOUR KNOWLEDGE BECOME BRILLIANT

  
Principal  
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