



SNS COLLEGE OF TECHNOLOGY

Coimbatore – 641 029

An Autonomous Institution



DEPARTMENT OF CIVIL ENGINEERING

23CEB204 – ENVIRONMENTAL ENGINEERING

II YEAR / IV SEMESTER

UNIT 1 : SOURCES, QUALITY AND DEMAND OF WATER

Topic 1 : Necessity of Water Supply and Sources of water



UNIT 1 :SOURCES, QUALITY AND DEMAND OF WATER



Public water supply system – Planning - Objectives - Sources of water and their characteristics - Design period - Population forecasting - Water demand – Standards – Water quality index - Smart Water Management Technologies



Importance and necessity of water supply scheme



Water should be free from impurities

The utility of water enormously increased & without well organized public water supply scheme, it is impossible to run the present life

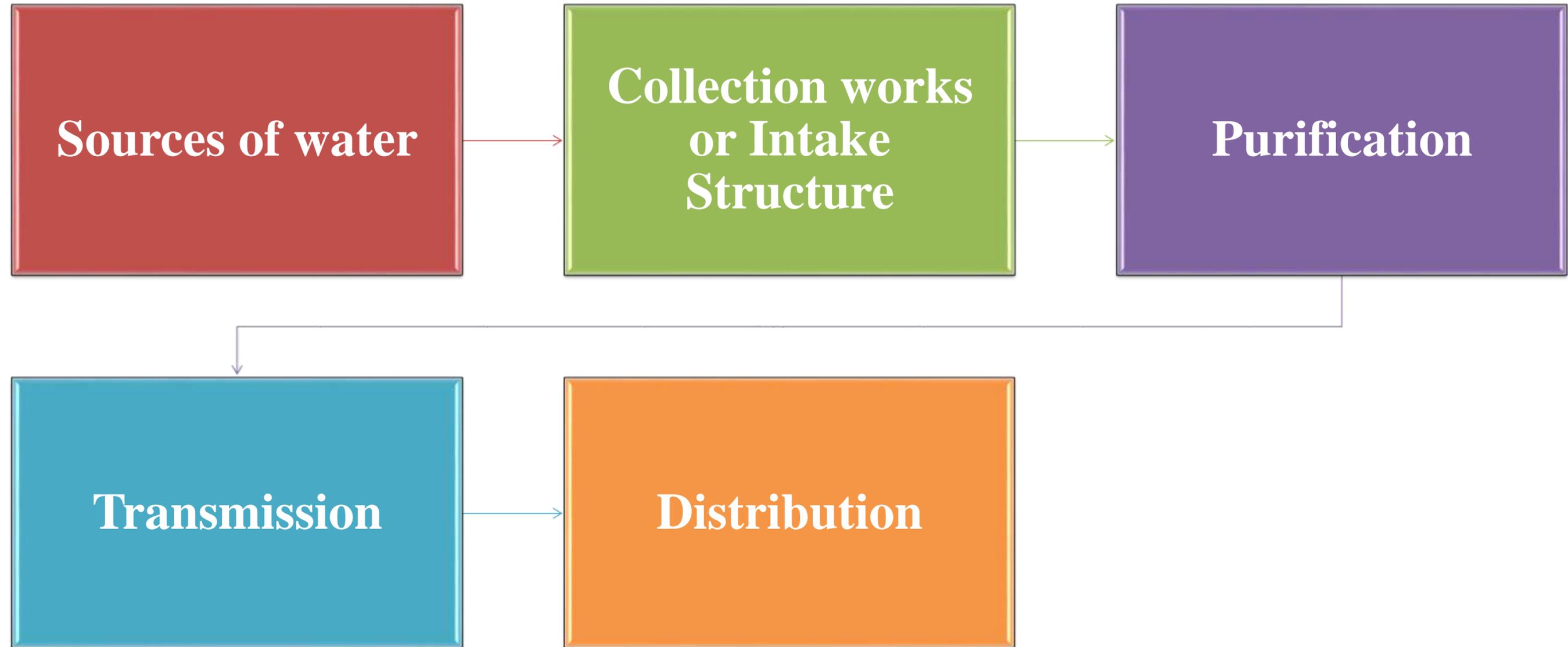
Wholesome water - Water that is safe to drink, cook and use for washing

Water required for various purpose:

- **Drinking & cooking**
- **Bathing & washing**
- **Lawns, gardens, crops, street washing, fire fighting, various industrial purposes, heating, air conditioners, etc**

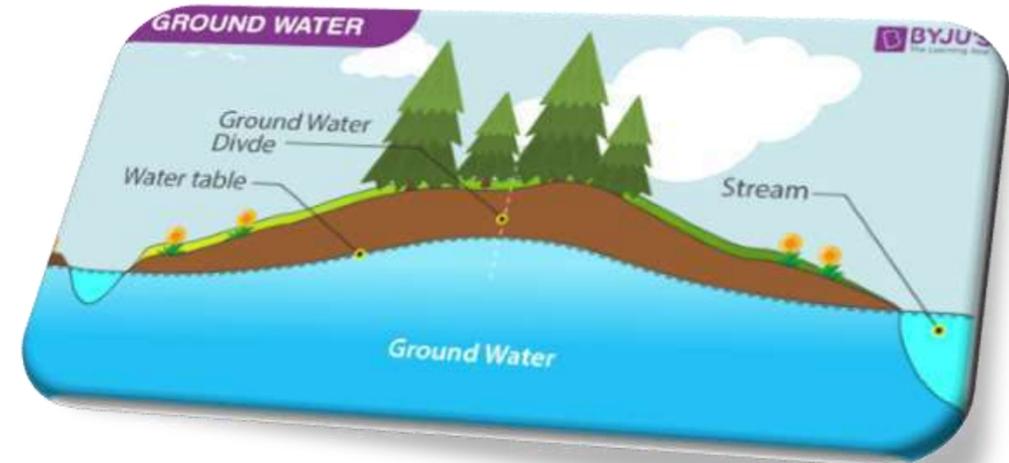
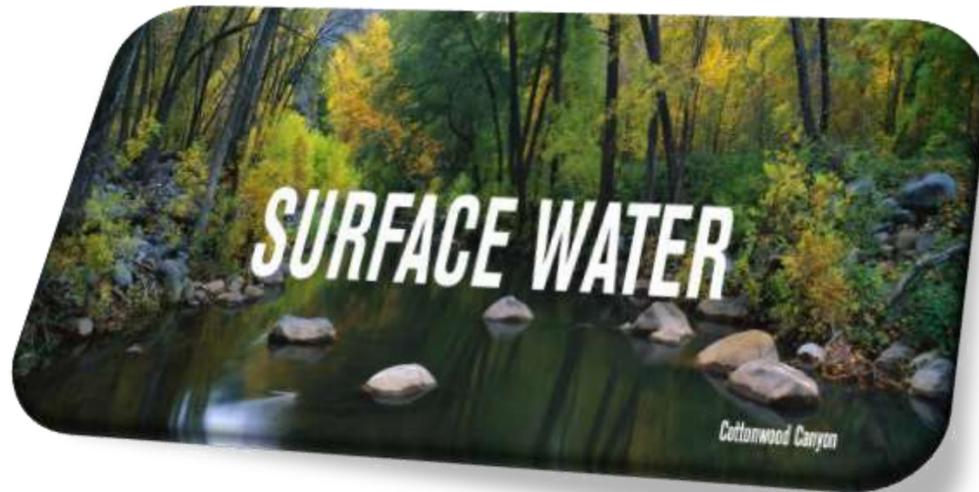


Water Supply system





Sources of Water





RAIN WATER

(a) From roofs of houses and dwellings

- Water is stored in small underground tank or cistern, for small individual supplies

(b) From prepared catchments

- The surface of catchment is made impervious by suitable lining material, and suitable slope is given so that water is stored in moderate size reservoirs.



Rainwater Catchment System





Sources of water



Surface Water

Oceans



Ponds and lakes



Rivers and streams



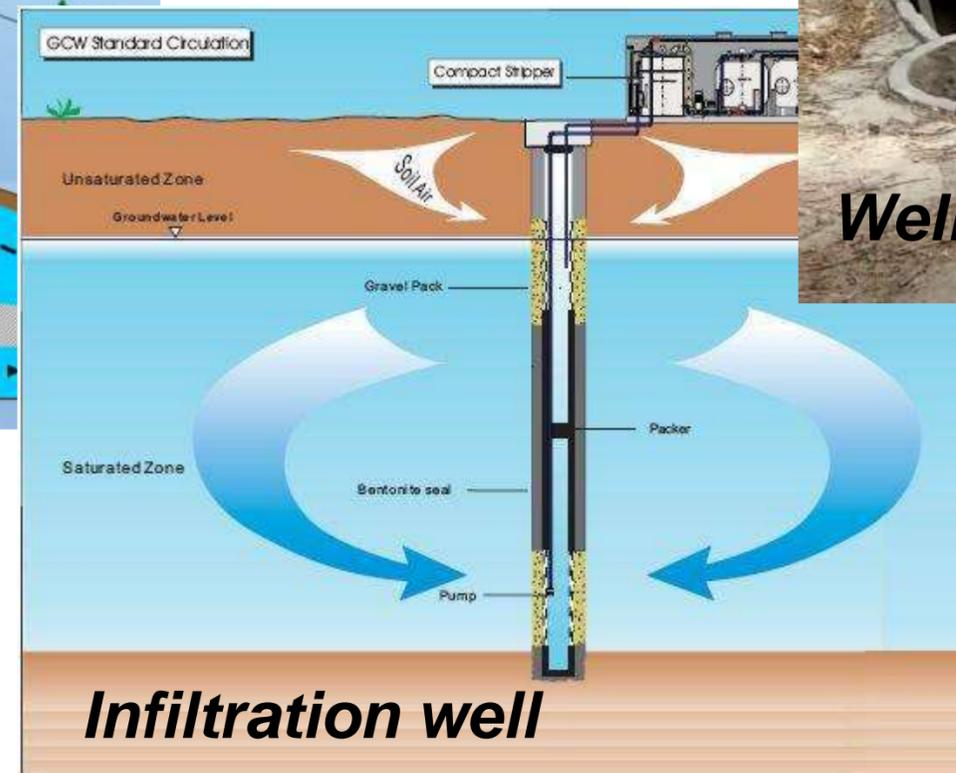
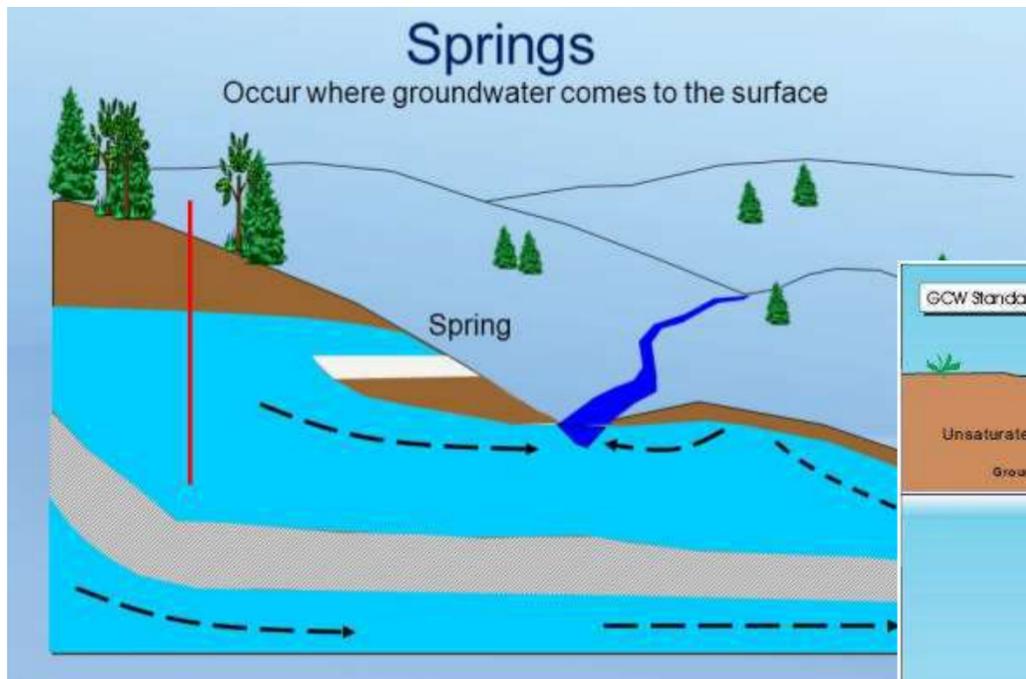
Storage Reservoir



Sources of water



Underground Water





SPRINGS

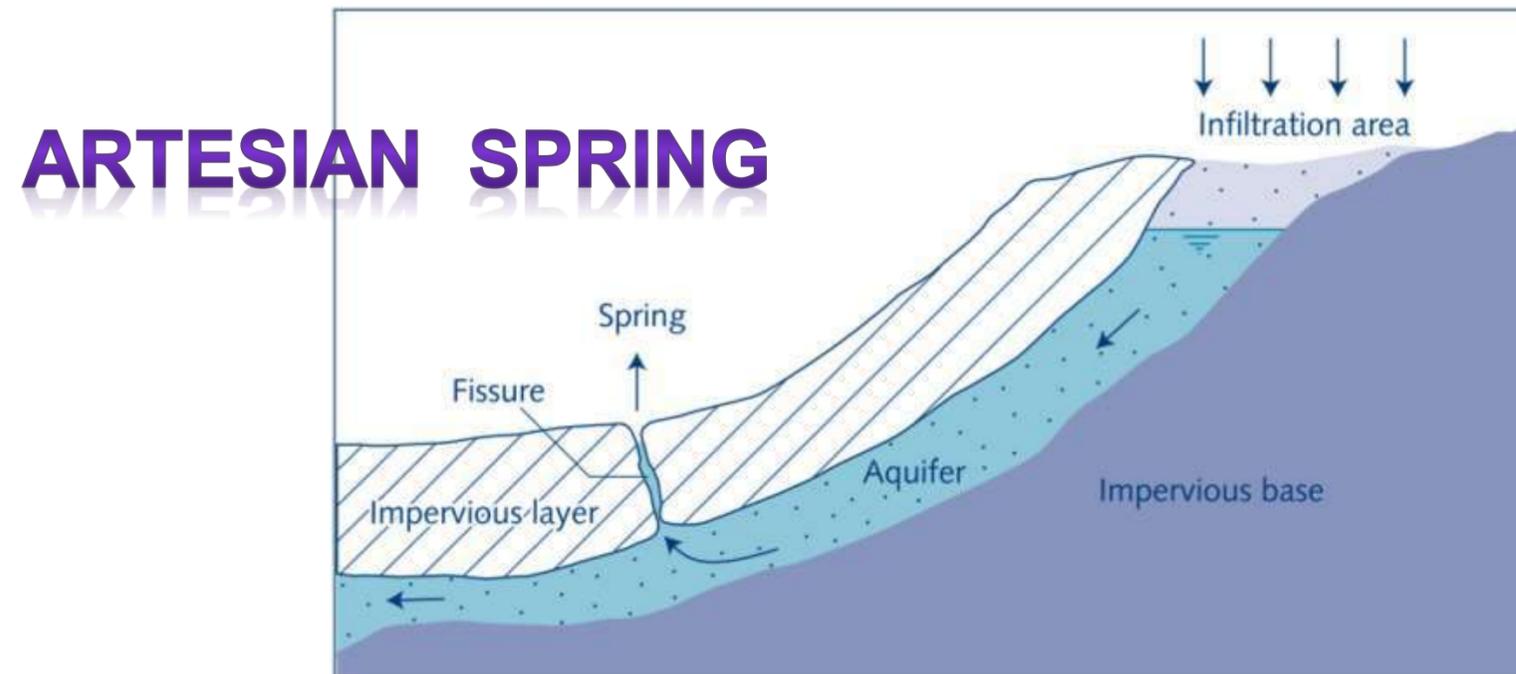
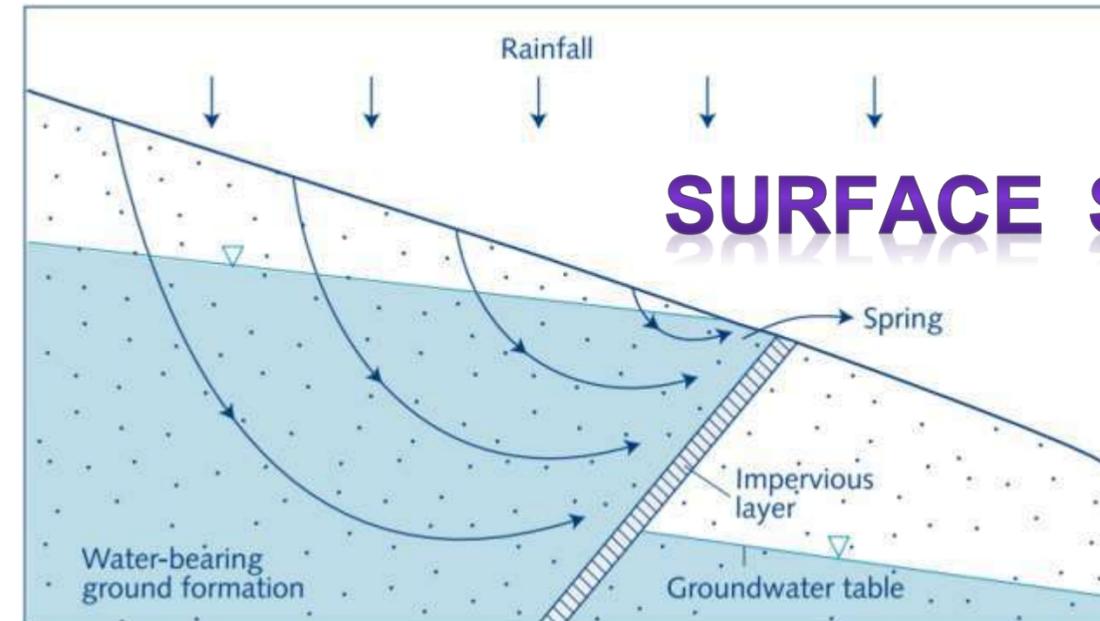
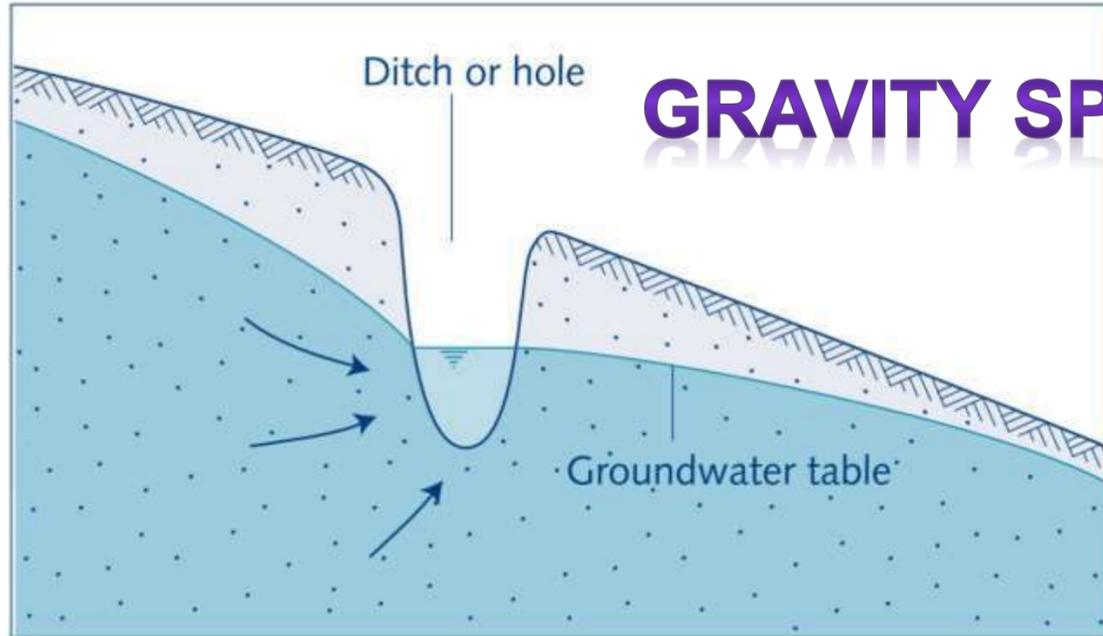


THE NATURAL OUTFLOW OF GROUNDWATER AT THE EARTH'S SURFACE IS KNOWN AS SPRINGS



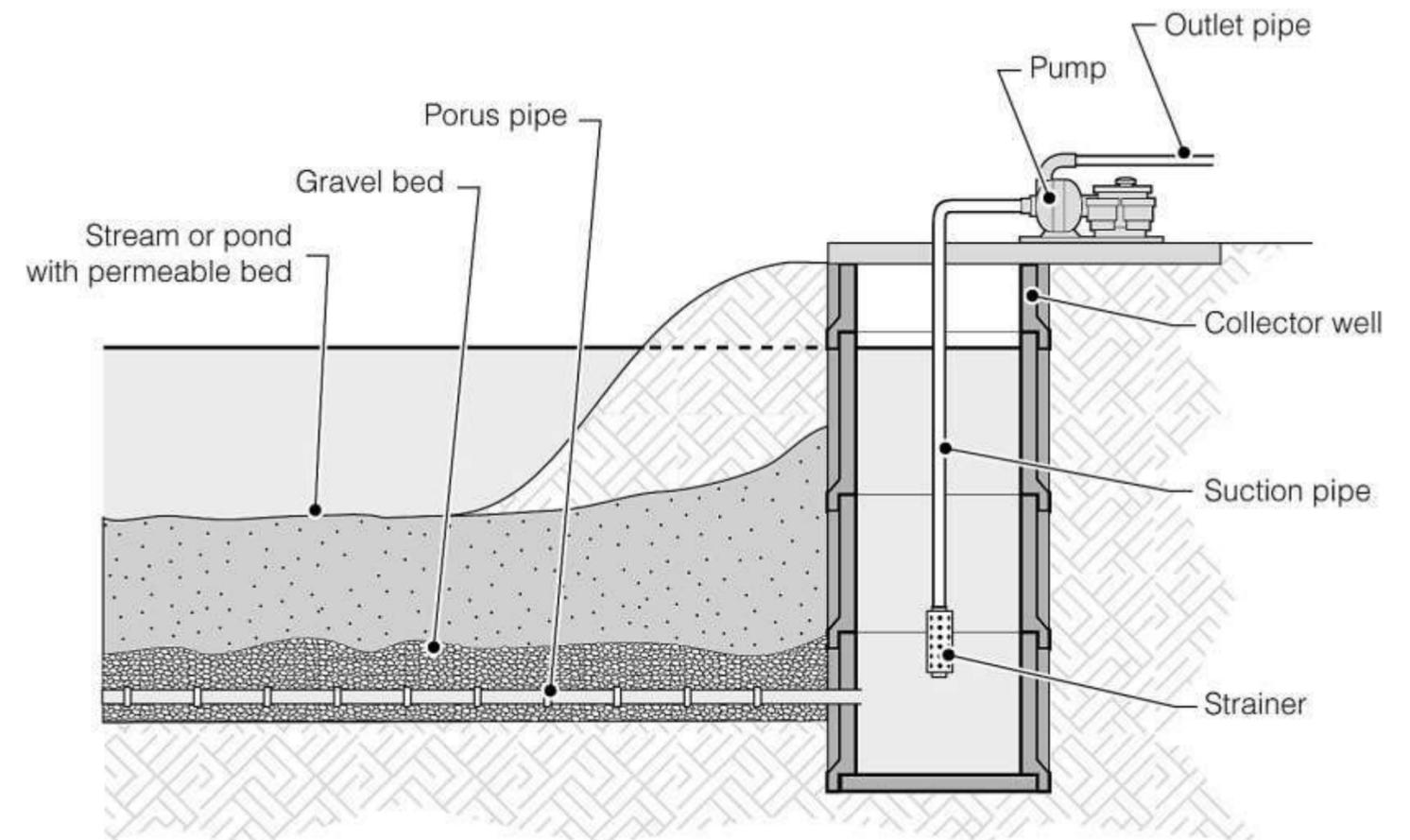
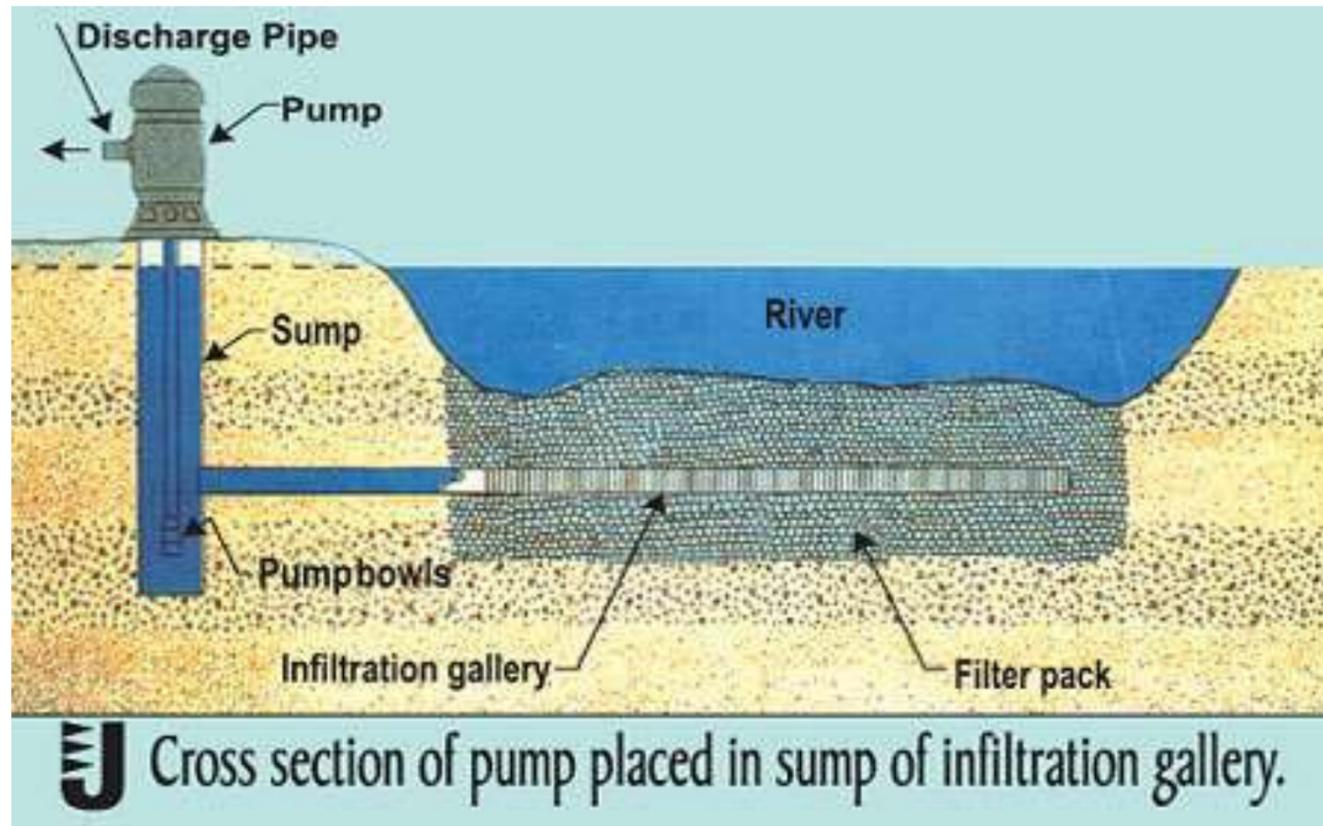


TYPES OF SPRINGS



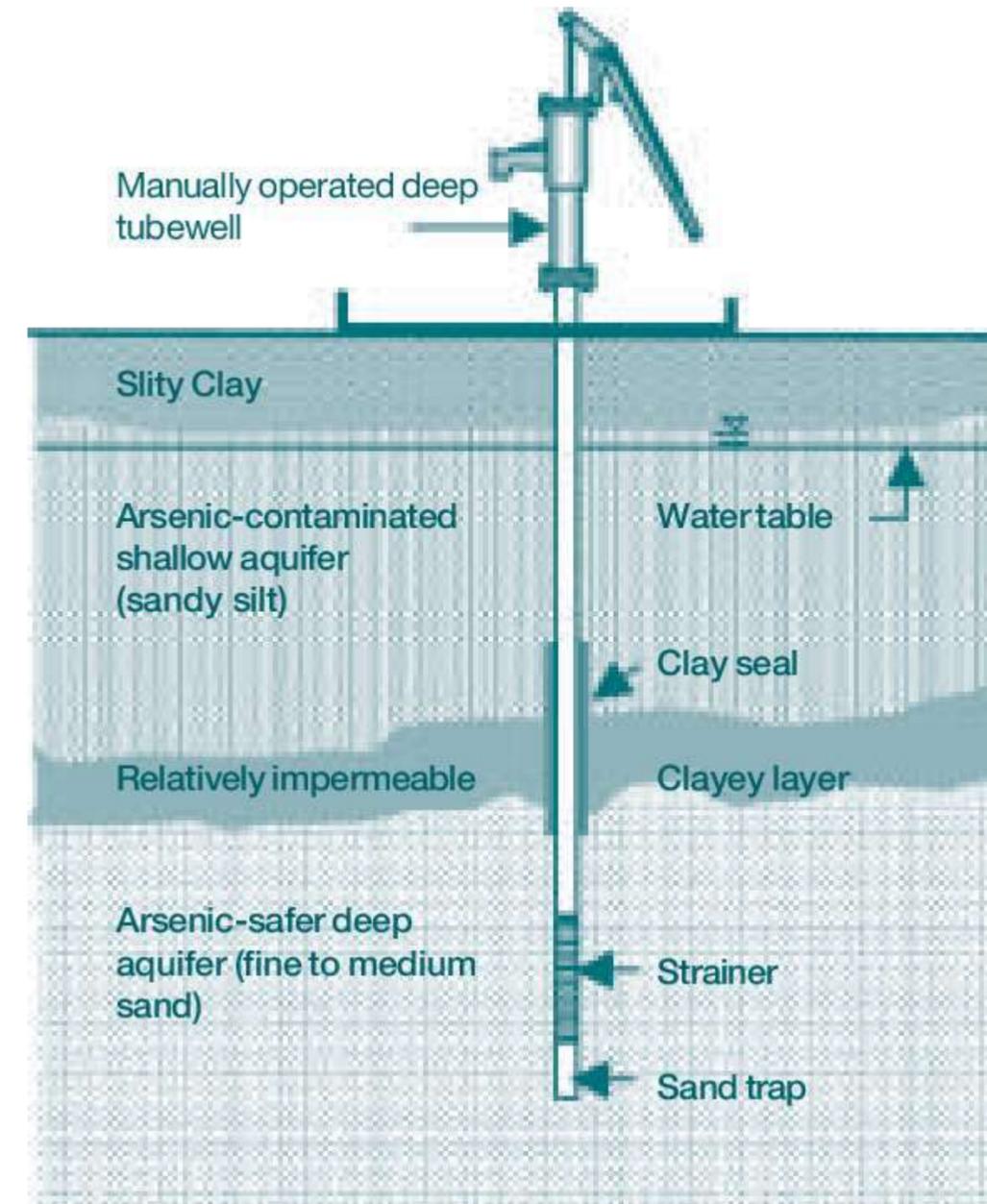
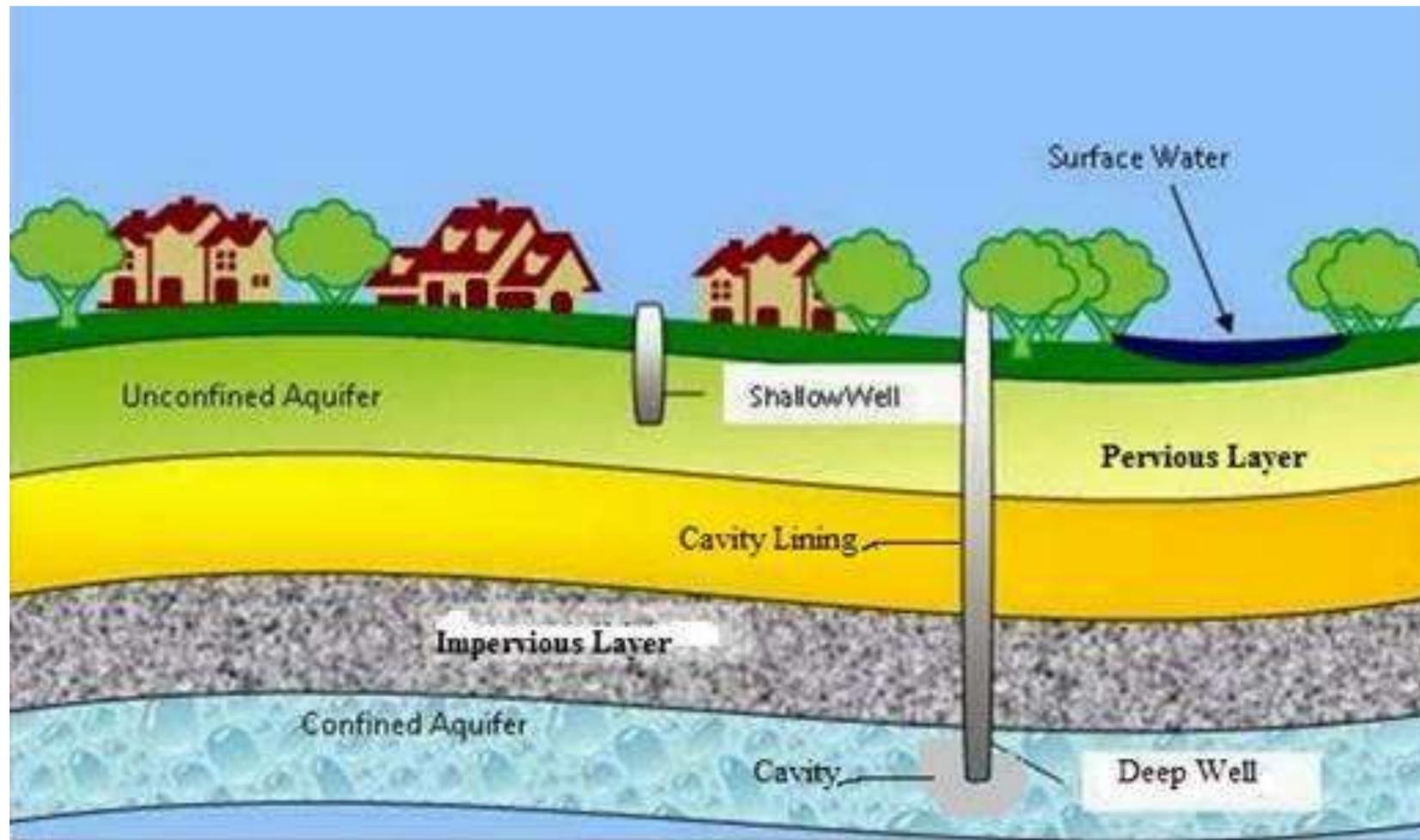


INFILTRATION WELL AND GALLERIES





WELLS





Water obtained by reclamation



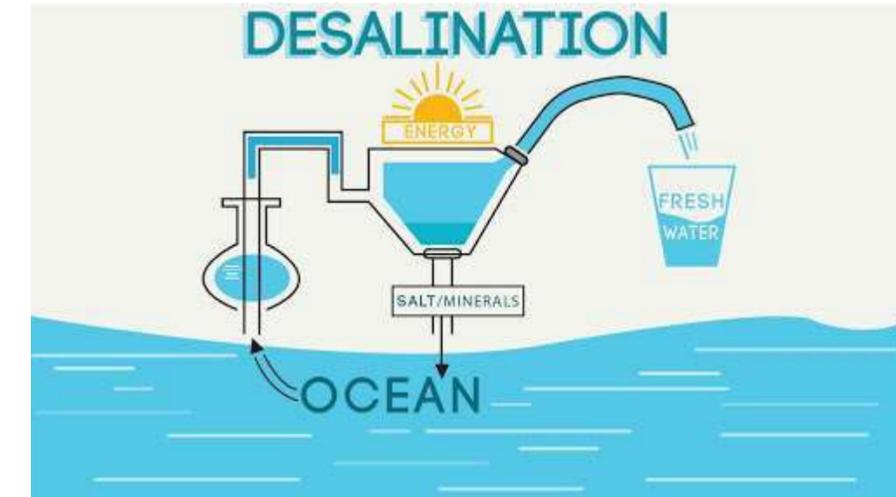
✓ Desalination

Saline or brackish water may be rendered useful for drinking purposes by- installing desalination plants..

The common methods used for desalination are: distillation, reverse osmosis, electrodialysis, freezing and solar evaporation.

✓ Re-use of treated waste water

Effluent or waste water can be treated suitably so that it may be re-used❖.





References

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Thank You