

Water Sources

Common surface water sources include lakes and rivers, and precipitation or spring water that has been channeled into surface water storage in reservoirs. Most drinking water used by larger communities (especially in cities) is taken from surface sources. Surface water sources generally need both filtration and disinfection to be potable.

Surface water sources include:

- 1-rivers and streams
- 2-lakes
- 3- Impoundments (man-made lakes created by damming)
- 4- Shallow wells directly affected by precipitation
- 5- Springs whose flow or quantity directly depends on precipitation.
- 6- Rain catchments (drainage basins)
- 7- Tundra ponds (peat bogs)

Several factors affect runoff over land surfaces. These include:

- 1- Rainfall duration: any rain, if it lasts long enough, will eventually saturate the soil and allow runoff to take place.
- 2- Rainfall intensity: hard-driving rain saturates the soil more quickly than gentle rain.
- 3- Saturated soil holds no more water; excess water builds up on the surface, creating surface runoff.
- 4- Soil moisture: already saturated soil causes surface runoff to occur sooner than dry soil.

Watershed Management Programs

Suspended solids removal methods are chosen based on 1- the initial concentration of solids in the wastewater; 2- the desired final concentration; 3- and the particles' size, settle ability, 4- thickening characteristics, 5- and discrete or flocculent nature. Techniques typically used to remove suspended material from waste streams with TSS.