

## Water Quality Characteristics

Water quality parameters provide a basis by which to measure water's physical, chemical, and biological characteristics. These parameters include a range of characteristics that make water appealing and useful to consumers.

### A- Physical Water Quality Characteristics

Water's physical characteristics (those detectable by sight, touch, taste, or smell):

#### 1. Solids in Water

Solids removal is of great concern in drinking water treatment. Suspended materials provide 1-adsorption sites for biological and chemical agents, 2-and give microorganisms protection against chlorine disinfectants. As suspended solids degrade biologically. Solids can be either suspended or dissolved in water, and are classified by 1- their size and 2- state, 3- by their chemical characteristics, and 4- by their size distribution these solids consist of inorganic or organic particles, or of immiscible liquids such as oils and greases. Surface waters often contain inorganic solids such as clay, silt, and other soil constituents as the result of erosion. Organic materials (including plant fibers and biological solids such as bacteria) are also common in surface waters. Groundwater seldom contains suspended solids because of soil's filtering properties. Filtration provides the most effective means of removing solids in water treatment, although colloids and some other dissolved solids cannot be removed by filtration.

#### 2- Turbidity

Water's clarity is usually measured against a turbidity index. Insoluble particulates scatter and absorb light rays, impeding the passage of light through water. Turbidity indices measure light passage interference. Surface water turbidity can result from very small particulate colloidal material (rock fragments, silt, clay, and metal oxides from soil) contributed by erosion or by microorganisms and vegetable materials.