

## Turbidity

The Turbidity of any water sample is reduction of transparency (measure of the cloudiness or murkiness of water) due to the presence of particulate matter. Turbidity in water is caused by suspended, dissolved and colloidal matter such as organic (plant and animal matter, plankton and other microscopic organisms or living biological organisms for example algae) and Inorganic particles (silt, clay and natural chemical compounds like calcium carbonate). The correlation of turbidity with the size or number of particle concentration of suspended matter is difficult because size, shape and refractive index of the particles affect the light scattering process.

### **Turbidity in surface water bodies usually has organic and inorganic matter and it can be caused by:**

- Heavy rains, flooding and spring runoff
- Algae blooms
- animals
- Human activities that disturb land (ex: construction)
- Storm water pollution from urban areas.

Turbidity in groundwater is mostly inorganic and caused by natural geological factors.

### **Effect of turbidity**

- It can harm fish and other aquatic life by reducing food supplies, preventing successful development of fish eggs and larvae and modifying natural movements and migrations.
- It can increase the cost of water treatment for drinking and food processing
- reduce the aesthetic quality of lakes and streams, having a harmful impact on tourism

- Give the water smell or taste.
- Increase the amount of chlorine that has to be added to disinfect the water

## Measurement of turbidity

In laboratory, turbidity was measured by Nephelometric method using a turbidimeter. This method depends on passing specific light in a specific wavelength through the sample. The instrument was calibrated before each sampling by using standard solution of (10, 100 and 1000 NTU) that prepared by manufactured company. The result was expressed as NTU.

This method has advantage; it is very accurate, and especially useful for measuring very low turbidities (less than 5), while disadvantages are high cost, need power supply and easily damaged.

