Turbidity is a water quality term that refers to the cloudy appearance of water, caused by particles or "suspended matter".

There are many types of particles that may be present in water, some of which are large enough to be seen and some are not. Turbid water contains particles that are too small to be seen without magnification, but the particles produce effects that can be detected with the human eye because they scatter light.

The particles that cause turbidity are those that are about the same size as wavelengths of visible light (or smaller), described as colloidal size. Colloids are so small that they never settle, even gravity does not affect them. Brownian motion, which is the result of constant collisions between these particles and other dissolved molecules, keeps the colloids suspended.

Water turbidity is a normal function of nature usually resulting from debris water picks up as it travels through streams and rivers. However, turbid water may contain a variety of particles, including:

- Clay
- Asbestos
- Bacteria and viruses
- Debris from plants, animals and biofilms
- Bio colloids, including proteins and complex carbohydrates from plants
- Corrosion products, such as rust, lead and copper oxides
- Lime scale

It is so important to remove turbidity from water before it is disinfected that the Environmental Protection Agency requires all waterworks facilities to test every day for the presence of turbidity. It is the only water quality parameter that the EPA requires to be tested on a daily basis.

While turbid water is not necessarily harmful, it can be a sign of more serious problems. Particles in turbid water interfere with the disinfection process because they shield harmful water contaminants, such as viruses and bacteria, from destruction by the disinfectant.

In addition, turbidity particles adsorb other dissolved water contaminants and carry them through the system. Turbidity particles known to be harmful themselves include asbestos, lead, bacteria and viruses, and protozoan cysts such as Giardia and Cryptosporidium.

Although water is tested and treated for turbidity before it leaves the waterworks facility, water can pick up turbidity particles on its way to your faucet.

Turbidity problems are easily solved with point-of-use (POU) water filtration systems specially designed to remove small particles. Activated carbon is especially effective because it can remove many things by adsorption onto its enormous surface area.

POU systems designed for the consumer are typically the size of a household fire extinguisher. They are installed under the kitchen sink and dispense filtered water through a dedicated drinking water faucet.

It is important to look for a model that is certified by NSF International to Std. 53 for turbidity. NSF is an independent testing agency that sets product standards and certifies the performance of POU systems.