Water Quality Chemistries – Parameter Descriptions

Turbidity

Turbidity is the measure of the relative clarity of water. Turbid water is caused by suspended materials in the water column, such as soils, organic matter, and microscopic organisms. Turbidity should not be confused with color since darkly colored water can still be clear and not turbid.

Temperature

Aquatic animals (e.g. aquatic insects, fish, amphibians) are sensitive to changes in water temperature and require a certain temperature range to survive and thrive. If water temperature is outside that range for a long time, organisms can become stressed and potentially die. Temperature also affects the amount of oxygen water can hold. Cold water holds more oxygen than warm water, and all animals need oxygen to survive. Temperature also affects the rate of photosynthesis by aquatic plants and the sensitivity of organisms to toxic wastes, parasites, and disease.

Dissolved Oxygen

Dissolved oxygen (DO) is just what is sound like – oxygen that is dissolved in the water. Fish and other aquatic organisms need a minimum amount of DO to survive, from about 2 to 5 parts per million (ppm), depending on the body of water. Natural waters with consistently high dissolved oxygen levels are most likely healthy and stable environments, and are capable of supporting a high diversity of aquatic organisms.

pH

pH is a measurement the acidic or basic quality of water. The pH scale ranges from a value of 0 (very acidic) to 14 (very basic), with 7 being neutral. Most aquatic animals prefer a range of 6.5 to 8.0 and are adapted to a specific pH level and may die, stop reproducing or move away if the pH of the water varies beyond this range. Low pH can also make toxins more harmful to aquatic plants and animals.

Information from: www.monitorwater.org, www.mwra.state.ma.us

Water Quality Chemistries – Parameter Prompts

Turbidity Prompts

What are some things that you think might affect turbidity?

- soil erosion
- urban runoff
- algal blooms
- bottom sediment disturbances (boat traffic and abundant bottom feeding fish)

Temperature Prompts

What are some things that might cause water temperature to change?

- Season
- Weather
- Discharge from factories
- Water source (storm water, discharge from factories, etc.)
- Amount of shade (removal of riparian trees and vegetation)

Dissolved Oxygen Prompts

How do you think oxygen gets into the water?

- From the air (atmosphere)
- Plants and photosynthesis

What do you think might affect DO concentrations?

- Plant life
- Temperature
- Turbidity
- Organic waste (nutrients)

pH Prompts

What are some things you think might affect pH?

- acid rain
- wastewater discharges
- drainage from mines
- and the type of rock naturally found in the area