

Why is the water orange?

The water in the stream near my home looks orange and oily. Why is that?

The orange, fuzzy deposits in the photo to the right are called iron-oxide deposits. When iron bacteria (*Sphaerotilus-Leptothrix*) “feed” on iron in water, the dissolved iron reacts with oxygen in the air and forms rust-colored iron oxides. These deposits can be found in lakes and streams and often occur on hot, dry days when the water is sluggish. You may notice an unpleasant odor.

Are iron bacterial harmful?

Although water with iron-oxide deposits looks strange, this process occurs naturally, is not toxic to fish and aquatic life, and does not pose an environmental health risk.

Where does this type of bacteria come from?

Iron is a common element found in water and soils. A small movement of earth into a lake can set off a process of iron bacteria forming iron-oxide deposits. Iron-fixing bacteria are not new. They’ve probably existed in streams for over a million years!

I also noticed an oily sheen in the stream...

Oily sheens often indicate that iron bacteria are present. These sheens are different from those caused by petroleum products, because they break apart when disturbed. Throw a stick into the water. If the sheen breaks apart into pieces, it is probably a result of iron bacteria. If the sheen just ripples but stays together, it may be due to a petroleum product, which can be harmful to fish.



What can we do about iron-oxide deposits?

Because iron bacterial is not harmful, the best thing to do is wait for the water to clear. Dissipation often occurs after a rain shower. If you see something that could be water pollution in Bellevue, please call the City of Bellevue Utilities Department any time at 425-452-7840, and we will investigate.

Why is the water blue-green?

The water in the lake near my home looks blue-green and slimy. Why is that?

Blue-green algae, or cyanobacteria, are plant-like bacteria found in lakes and ponds in warm, summer months. Colonies may clump together and form a scum that can cause water quality problems. Cyanobacteria will die and disappear after 1-2



weeks. But, if conditions remain favorable, another bloom can replace the previous one and may appear to be one continuous bloom occurring for up to several months.

Are cyanobacteria harmful?

Although most blue-green algal blooms are not toxic, some blue-green algae produce nerve or liver toxins, which can cause illness in humans and kill pets, waterfowl, and other animals. Testing can confirm whether a bloom is producing toxins or not. However, because a bloom that tests non-toxic one day can turn toxic the next and a single species can have toxic and non-toxic strains, the Washington State Department of Health recommends the following:

- Avoid contact with water if algae are evident or there is an obvious green to blue-green appearance; and
- Don't let pets or livestock swim or drink in water that has scum or algae. If a pet does go into an area like this, rinse the pet as soon as possible.

What is being done about cyanobacteria?

Local public health departments and the Washington State Departments of Ecology and Health are responsible for identifying and testing blue-green algal blooms. Bellevue is supportive of these efforts and will also collect samples for testing by Ecology if a citizen reports a bloom or surface scum to the City. If there is a significant bloom or if Ecology's testing shows a sample to be positive for toxics, Bellevue will work with Ecology and Health to post caution signs, communicate with the public, and/or close the lake temporarily.

Who should I contact if I see cyanobacteria or want more information?

Potential health impacts of toxic algae or how to manage blue-green algae:

Joan Hardy joan.hardy@doh.wa.gov
State Department of Health 360-236-3173
www.doh.wa.gov/ehp/algae/guidelines.htm

Ecology's Freshwater Algae Control Program (testing):

Kathy Hamel kham461@ecy.wa.gov
Dept. of Ecology 360-407-6562
www.ecy.wa.gov/programs/wq/plants/algae/publichealth/GeneralCyanobacteria.html

City of Bellevue sampling of algae bloom for testing:
OMSupport@bellevuewa.gov
City of Bellevue Utilities 425-452-7840

Citizens can also request sample kits and submit samples directly to Ecology per directions on Ecology's webpage: www.ecy.wa.gov/programs/wq/plants/algae/monitoring/index.html