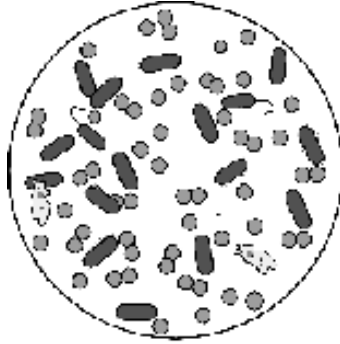


Environmental Health

FAST FACTS

Using Ultraviolet Light to Treat Water

We all need drinking water to live. However, not all sources of drinking water are safe. Surface water from lakes, rivers, streams and springs is often contaminated with germs. If people drink this water, they can become ill.



Ground water supplies, particularly those very close to the surface, such as dug wells, can also become contaminated. For surface water and dug wells, a treatment device is often needed to make the water safe for drinking. Using Ultraviolet Lights (UV Lights) is one way to kill the bacteria in drinking water.

How do UV Lights work?

The lamp looks like a fluorescent light. Water enters through the bottom part of the ultraviolet light reactor chamber, swirls around the ultraviolet lamp and comes out the top. When the water is exposed to the UV light in the chamber, the germs are killed.

How does UV light kill germs?

Most germs in drinking water are single cell microbes. They make up groups of microbes known as viruses, bacteria, fungi, and algae. When UV light passes into these cells, the cell's genetic material is rearranged. When this happens, the cell can no longer multiply and is considered dead.

When will UV lights not work?

1. UV lights may not work when there are too many germs in the water (more than 1,000 total coliform per 100mL, or more than 100 fecal coliform per 100mL). Have the raw water tested before you install a UV light to measure germs.

2. Suspended solids (sediment) can cover the germs so that the UV light cannot pass through. Sometimes filters need to be installed to remove sediment before the water gets to the UV light.
3. Minerals in the water can coat the UV light, cutting down on the strength of the UV light. The lamp may need to be cleaned to remove mineral deposits.
4. It is important to follow the manufacturer's instructions for voltage, cycle and changing the lamps. Some UV lights have alarms to let you know when the bulb is not working properly. You can check if your UV light is working by testing the water that has been treated by the light. If the test is bad, you likely need some maintenance on your light.

How do you know the UV light is working?

The best way to tell if the light is doing its job is to test the treated water. Contact your local Health Unit for sampling information.

Do UV Lights always work?

UV lights do not kill all germs. If there are worms or cysts in the water, special filters will be needed to remove them. UV lights will not leave a chemical in the water to help it stay safe for drinking. In some cases, an additional treatment device, such as a chlorinator, may be needed.

For more information on UV Lights, call the Environmental Health department of the Haliburton, Kawartha, Pine Ridge District Health Unit.

Adapted from information provided by the Muskoka-Parry Sound Health Unit.