

Lake Water System #2 - No pH adjustment

How It All Works

Step #1 - Tannin/Colour Removal

Tannins are large molecular weight organic compounds. They are formed through the decomposition of plants and, to a much lesser degree, animals. These organics are generally found in surface waters like our lakes and rivers or shallow wells. There are two primary categories in which tannins fall: Humic acid and Fulvic acid . These are simplified structures of very large molecules. The structure of the tannin varies from location to location, depending on the vegetation in the area. Tannins can cause a yellow to dark tea color in water and may impart taste and odor. The tannins most typically found in our region are brown or tea coloured.

Tannins can be difficult to remove from water. One treatment method may be effective in one area, but may be totally ineffective 10 miles down the road. It is dependent on the vegetation of the well, lake or river. At Muskoka Clean Water we have found that acrylic-based resin are producing excellent results in most cases. We use a gel based resin in almost all of our tannin removal filters but can custom build a system based on our test results.

The removal of tannins via anion exchange resins occurs through both an ion exchange and an absorption process. Tannins have a slightly negative charge. Because of this, they are exchanged for chloride onto the resin and a brine tank for salt regeneration is required. Tannin filters look and function a lot like softeners.

Step #2 UV Light for Disinfection

Ultraviolet or UV is a commonly used form of disinfection. It provides a chemical-free, low-maintenance option for treatment of private water sources. UV water treatment can be used on water from dug or drilled wells, surface water like lakes, and for harvested rainwater.

Each water source can present unique water quality challenges which can impact the effectiveness of the UV system. For a UV water treatment system to be completely effective, the UVC light generated by the lamp needs to be able to pass through the water unimpeded so that it can inactivate any microorganisms present.

The ability of the water to transmit UVC rays is known as ultraviolet transmission (UVT). To be an effective method of disinfection, the UVT of the source water needs to be greater than 75% and some sources say 85%. The difficulty for a typical residential installation is that UVT does not directly correlate with the visual clarity of the water. For instance, a glass of distilled water will transmit UVC rays at 99 -100% however, if you add a teaspoon of sugar to it and dissolve it completely, the water will look just as clear as before, but the UVT will have dropped from 100% to as little as 50%. Many water contaminants will have a similar impact.



About Muskoka Clean Water

SERVICES AVAILABLE

Technical Support
Installation and Setup
Maintenance

Financeit

- Well trained courteous staff.
- Store front location to serve all your water treatment needs.
- We use NSF certified and CSA certified products when and where applicable in our filters and installations.
- We service all types of water treatment systems even if we did not sell it.
- Members of the Canadian Water Quality Association and the Water Quality Association.



Muskoka Clean Water
What's in Your Water?

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