

Camp Stephens: The Best Water System for the Best Summers

YMCA-YWCA Camp Stephens - located within the Lake of the Woods region in northwestern Ontario - was established 125 years ago, making it one of the oldest camps for children and youth in Canada. The camp is situated on a cluster of islands, and the main island is approximately 20 acres in size. The camp consists of 18 sleeping cabins and can house up to 220 people.



Camp Stephens - Lake of the Woods, northwestern Ontario

The Challenge

Rural camps with limited resources are often faced with the challenge of generating clean potable water that is compliant with stringent water quality regulations, imposed by environmental regulators. Camp Stephens is no exception - they source their water from the Lake of the Woods, which is high in colour from organic matter. The lakes shallow water, strong winds, and dense boat traffic perpetuates unsteady water conditions, thus making it difficult to treat water effectively.

The camp's water treatment system was incapable of producing water that was satisfactory to campsite needs. Due to the difficulties associated with removing colour from water, the UV intensity levels of the system would often drop to insufficient levels, causing the system to shut down automatically on a regular basis. This led to a boiler water advisory to be imposed by the Ontario Ministry of Environment and Climate Change.

The camp was in need of a new water treatment plant that was capable of consistently producing high volumes of clean, potable water. The system needed to be reliable and simple to operate, yet sophisticated enough to deal with volatile conditions and high organic matter in source water. Although the system would only operate seasonally, the plant components also must withstand temperatures as low as -40° C during the winter.

*“Based upon our discussions with regulatory bodies, it is understood that for the first time in five years, the camp opened in the spring without a boil water advisory” - Jeff Dyck, P.Eng.
Senior Municipal Engineer, Principal
J.R. Cousin
Consultants Ltd.*

Camp Stephens Water Treatment Package

The Solution

JR Cousin Ltd. worked with Osorno Enterprises Inc. to implement a water treatment system that delivers enough high quality water for 220 campers and staff. The system was designed to be relatively simple to operate, and capable of adjusting to the fluctuating water conditions of the Lake of the Woods.

The water treatment plant is made up of the following components:

- Automatic electronic control;
- Chemically assisted pre-filtration via media and cartridge filters;
- Filtration via Reverse Osmosis;
- Preventative chemical treatment against biofouling and scaling;
- UV Disinfection followed by chlorination with pH correction.



"Osorno was always available to walk us through any difficulties with the system, which was very helpful. Not only did we have enough treated water for the whole camp this year, but it tasted great too!" - Mat Klachefsky, Director, Camp Stephens, YMCA-YWCA of Winnipeg

The result is 7,000 to 9,000 l/day of safe, clear and clean water available for drinking, doing laundry, cleaning, and preparing food. Ontario regulators noted that this was the first small, chemically assisted water filtration system they had seen in the province with such a level of sophistication, which produces water quality far beyond their expectations.

"The system we installed for Camp Stephens delivers the benefits of a large water treatment plant on a very small scale" - Irena Motnenko, Chief Technical Officer, Osorno Enterprises Inc.

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