



Rushmere, BC September 2, 2009

BI Pure Water (Canada) Inc. has completed an ultrafiltration-based water treatment plant for the community of Rushmere, British Columbia. Located close to the Alberta border, this small resort village draws surface water from Lake Windermere. The water has high turbidity levels and high amounts of organics.

In 2007, BI Pure Water Inc. was commissioned to perform pilot testing on Lake Windermere. The pilot plant consisted of a 20 micron sand filter, 5 and 1 micron absolute cartridge filters, as well as ultraviolet radiation and chlorination units. After three months of testing, it was concluded that this equipment could not reduce turbidity to a level below 1 NTU. Additionally, the filters needed to be changed every three days. This pilot did not meet BC drinking water guidelines.

A second pilot plant was commissioned in the summer of 2008. The plant used 50 micron pre-filtration, followed by ultrafiltration (UF) and chlorination. Excellent results were obtained, leading to the selection of BI Pure Water as designer and manufacturer of a full-scale ultrafiltration water treatment plant with a capacity of 400 m³/day. The plant was commissioned in the summer of 2009.



Five UF housings are mounted on each side.



A 1 micron absolute filter follows the ultrafiltration membranes.

The UF component consists of vertical hollow fiber units, effectively removing suspended solids and pathogens. The PLC-based control system features monitoring instrumentation, automatic backwashing and membrane air integrity testing. A Clean-in-Place (CIP) system is used to clean the membranes when required.



Inlet screen filtration and CIP tank



Metering pumps for chlorine injection



Distribution pumps move water from storage



The control panel provides redundant controls

Operators can control the plant using either the touch screen on the control panel or hardwired switches. System monitoring and alarms are provided for both local and remote access through the BI Pure Water "Remote Monitoring and Trending System". This allows BI Pure Water to assist operators in the diagnosis of any potential problems.

Further protection of the drinking water is achieved by injection of a Chlorine solution. The treated water is then stored in storage tanks until sufficient Chlorine contact time is achieved. The water is then pumped to the distribution system at a constant pressure with the use of pump variable frequency drives. These VFDs save considerable power costs as a bonus.

Depending on budget, these water treatment plants can be housed in a skid mounted building or in a 40 foot long, insulated shipping reefer.

BI Pure Water (BIPW) specializes in reviewing water quality test results, analyzing customer needs and then prescribing the most cost-effective solution. BIPW engineers pilot, design, manufacture, install, start-up and commission package water treatment plants. The operators are then trained and the plants can be serviced on a regular basis. BIPW focuses on small and medium-sized water treatment plants to meet the needs of Federal, Provincial and Municipal Governments, Industrial Process, Mining Camps, Private Water Systems, Resorts and First Nations communities.

BI Pure Water package water treatment plants are cost-effective because:

- The water treatment plants are custom engineered to a specific water analysis and budget
- The plant can be built in the Port Kell factory where the trained staff work.
- Components and parts are readily available.
- The completed water treatment plant is leak- and flow – tested at the factory.
- The PLC is operated and debugged before shipping.

The benefits of using BI Pure Water's package plants are:

- Higher customer satisfaction due to one-stop shopping.
- Years of engineering experience embedded in the design.
- No "passing the buck" to subcontractors.
- Faster installation and start-up on site.
- Lower total cost.

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