

# Van West Water Utility

Whistler, BC, April, 2007

BI Pure Water (Canada) Inc. congratulates Van West Water Utility Corporation of Whistler, BC, for winning a BC Water and Waste Association - Small Water System award.



*Filtration and an R-Can Municipal UV System for flows up to 1136 LPM (300 USGPM)*

Owner Jon Perrett contracted BI Pure Water for an Engineering analysis and design in early 2006. CAD drawings and a design proposal were submitted to the VCHA and the Provincial Water Utilities Dept. for the new water treatment system. In April 2006, a Construction Permit was received by Van West and this phase started. Mr. Perrett was involved throughout and managed the installation process along with BI Pure Water.

The system treats approximately 950 LPM (250 USGPM) of water at peak times and up to 500 Cubic Meters per Day (58,000 USGPD). The well water quality is generally good, but the system falls under the GUDI rule where surface water may influence the well water.

The water treatment system comprises a filtration vessel with 1 micron absolute pleated filters, an R-CAN SUVAM 6C/4 municipal ultraviolet primary disinfection unit and then chlorine injection to provide a disinfection residual. To provide chlorine contact time before the first water user, a 400 mm (16 inch) diameter underground pipe loop was installed. Because of the limited space available, this is a cost-effective alternative to above ground tankage.

The water treatment system startup, commissioning and operator training took place in June 2006. The system has redundancy and remote alarms, necessary because the operator isn't based at the water treatment plant. The ultraviolet irradiation is very effective with initial microorganism and organics reduction. This significantly

reduces the amount (and cost) of chlorine used because most of the chlorine "demand" has been eliminated. A water sample is collected from the end of the contact chamber loop and analyzed by a chlorine monitor, which provides feedback to the chlorination pump.

This has proven to be an advanced water treatment system for a small water utility. Van West serves 55 residences and 220 commercial units, which is small compared to most water utilities. The limited customer base presented the challenge of limited return on new investment. Not to be held back, Mr. Perrett continued to seek a solution in response to new regulations and unsatisfactory bacteriological sample results that resulted in the issuance of a "boil water" advisory.

Bi Pure Water is a dealer for Canadian owned R-Can Environmental Inc., who manufactured the municipal UV equipment. The UV system is 3rd party validated to meet USEPA "UV Disinfection Guidance Manual" protocol. Because NSF certification is limited to UV units under 30 USGPM, manufacturers of larger UV equipment must verify the UV performance using the USEPA standards.

Drinking Water Officer, Cindy Watson, of the Vancouver Coastal Health Authority in Whistler, stated: "We are certainly satisfied with the results of the new Van West multibarrier water treatment plant. It sets an example for other small water utility operators who need to upgrade their systems to meet the current regulations."

Jon Perrett commented: "The Boil Water Notice was rescinded shortly after startup and even during a record setting rainy November, the water testing has met water quality standards for potable water. The effectiveness of the filtration and ultraviolet system can be demonstrated in the fact that the initial injected chlorine level of approximately 0.3 mg/L (ppm) normally only drops to approximately 0.28 mg/l in the distribution system. BI Pure Water and our company worked as a team to achieve these results."

Most water utilities, like Van West, only have part time operators. More automated water treatment plants with remote alarms are necessary in this case. Effective communication can be achieved through automatic phone dialers or links to the internet.

A water treatment system blueprint has been established for other small water treatment utilities that are under boil water advisories or need to expand their operations. Lists on the various BC Health regional websites show that there are more than 300 boil water advisories in BC alone.

Bi Pure Water (BIPW) specializes in reviewing water quality test results and 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 provides small and medium-sized water treatment plants for federal, provincial and municipal government, industry, remote camps, private water systems, resorts and First Nations communities.

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