

# Horizon North Camps

Northern Alberta

*July, 2015*

Horizon North is a full service camps and catering, manufacturing, transportation and logistics company. They provide a full range of services to the LNG, oil sands, oil and gas, mid-stream, renewable energy, mining and exploration, forestry and the construction sectors.



*The RO filtration skid is housed in an existing camp building*

BI Pure Water was selected by a Calgary engineering company to provide a treatment system to reclaim waste water for reuse for the main plant's processes. Dover Camp is an 800 person camp located 95km northwest of Fort McMurray in the RM of Wood Buffalo. BI Pure Water first decommissioned an existing reverse osmosis (RO) system, and completed the engineering, construction and commissioning of the new RO system.

There is a general shortage of pure water in this area and Horizon decided to save money by treatment and reuse of existing process water, to the tune of a million dollars every few years. Raw water at this site is supplied from a 6000 US gallon nanofiltration reject holding tank.

Four cartridge style filters in parallel remove particulate matter from the raw water before RO treatment. The unit is comprised of four RO vessels equipped with three membranes each; there are two RO trains in total, capable of redundancy. The maximum operating pressure is 600 psi.

Each RO unit draws up to 15 gpm (57 L/min) from the reject tank. About 12.2 gpm (46 L/min) will flow into the permeate stream and 2.8 gpm (11 L/min) will be rejected to waste. Up to 19 gpm (72 L/min) is recycled into the feed. The RO unit is designed to meet a permeate quality of TDS < 500 mg/L. An anti-scalant chemical dosing unit is required due to the water hardness. A clean-in-place skid was supplied for automatic membrane flush of the RO train on shutdown.

## CASE STUDY

BI Pure Water engineers utilized “Design for Resilience” when conducting the detailed design. This is the strategic design of infrastructure and other systems to sustain required operations during and after the impact of severe disturbances, plus adapt to longer term influences.

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 opera-

tors are then trained and the plants can be serviced on a regular basis.

BIPW clients include federal, provincial and municipal governments, industrial, mine camps, private water systems, resorts and First Nations.

BI Pure Water specializes in custom engineered treatment systems:

- Years of water engineering expertise: electrical, mechanical and civil engineers specializing in water treatment on staff
- Custom designed to a specific water analysis and budget
- Systems are leak and flow tested at the factory, the PLC is operated and debugged before shipping for faster installation and start-up on site, lower total cost
- We don't sub-contract
- Complete design, build, install, parts, service



*Clean in Place system left and control panel with touchscreen HMI.*



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*Custom Engineered Treatment Systems*