

# WTP No. 2 Iron & Manganese Removal City of Blaine

The City of Blaine recently decided to improve the drinking water quality supplied to the residents by constructing iron and manganese removal plants at the well sites around the City. The City retained PCE to design the first three plants.

A pilot study was completed at the Water Treatment Plant No. 2 well site with raw water provided by Wells No. 12 and No. 13. The pilot plant was also operated with a 50/50 blend of water from Wells No. 12 and No. 13. The study determined the design criteria for the removal of radon, iron and manganese from the well water.

Water Plant No. 2 is designed to treat water from wells No. 12, No. 13, and a future well. Well No. 12 produces 2,200 gpm and Well No. 13 provides 1,200 gpm. The future well currently under construction will produce 2,000 gpm for a total plant capacity of 5,500 gpm or 8



million gallons per day. The plant is designed to remove iron and manganese from the well water using the “Filtronic Process” using “Electromedia”. Water from Well No. 12 contains radon levels of 694 picocuries per liter (pCi/L). This is above the proposed maximum contamination level (MCL) of 300 pCi/L. Provisions have been made in the design to easily add aerators for removal of radon in the future if the radon standard is established at the proposed MCL of 300 pCi/L.

The plant is designed to operate with an onsite generator to take advantage of the lower off peak electric rates. The plant also has a 1-ton chlorine scrubber to neutralize any accidental release of chlorine.

The project was bid in January 2005 with the bid being awarded to Municipal Builders, Inc. The plant went online in March 2006 and began operating at full capacity since June 2006 after Well No. 17 was connected to the plant.

**Client: City of Blaine**

**Client Contact: Mike Ulrich, Public Works Director**

**Year Completed: 2006**

**Bid: \$4,228,200 Final Construction Cost: \$4,383,377 Change Order 3.7%**



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