

Finished Water

A PHOTOGRAPHIC PROFILE



Installing temporary culverts allowed the entire length of PVC pipe to be fused together in a single string.



SOUTH DAKOTA FUSIBLE PVC PROJECT SETS A RECORD

In August 2009, King Contracting, Lincoln, Neb., completed a record-breaking horizontal directional drill (HDD) of 4,800 lin ft of 24-in. fusible polyvinyl chloride (PVC) pipe under Lake Oahe near Wakpala, S.D. The HDD crossing was part of an 80-mi raw water transmission pipeline being constructed by the Standing Rock Rural Water Sioux Indian Tribe.

Crossing Lake Oahe was one of the most challenging aspects of constructing the new transmission line because of the lake's length and depth. The original

design called for a 3,660-lin ft HDD installation beneath one of the lake's major tributaries. With a depth of nearly 100 ft, the design required 24-in. fusible PVC pipe to accommodate the earth load and provide required hydraulic capacity.

When construction was to begin, the lake level rose to more than 30 ft above the previous season's level, requiring the drill length to be increased to 4,800 lin ft. Pipe pull-back took approximately 14 hr, with a maximum pull-force of 220,000 lb measured at the drill rig. The line was successfully

pressure tested to 235 psi two weeks following pull-in.

PROJECT SPECIFICS

Project Name: Raw Water Pipeline Phase 1, Contract 3-3

Owner/Engineer: Standing Rock Rural Water/Bartlett & West

General Contractor/HDD Contractor: S.J. Louis Construction/King Contracting

Completion Date: August 2009

Size: 4,800 lin ft of 24-in. fusible PVC pipe