

Smith Center Makes Water System More Operable with Valve Insertions



This photo shows the old Dutch Mill that was constructed in 1879-1882 by German immigrant Charles Schwartz. It was originally located at Reamsville, northwest of Smith Center. It ground corn, wheat and buckwheat for area residents and farmers for many years. It was moved to Smith Center in 1938.

Smith Center, Kansas is the home of the Smith Center Redmen, a small town football team that has done some amazing things. The Smith Center Redmen are widely considered one of the best little high school football teams in America. Throughout its history, the Smith Center football program has won eight state championships, including a state record-tying five consecutive championships from 2004-08. In addition, from 2004-09, the Redmen held the nation's longest winning streak at 79 games. Smith Center is also the home to the Dutch Mill built in 1879-1882. It is more than 50 feet tall and spans some 60 feet. The mill was built by Charles Schwarz, a native of Germany who homesteaded in Smith County in the 1870s. Its timbers were hewn from native logs and its burrs cut from native stones. For many years it ground corn, wheat, and buckwheat brought to it by farmers of the area. Wind power operated the mill until about 1913

when a kerosene engine was installed. It was relocated and became the center attraction in a beautiful city park that was built around it. Today it serves as a meeting place for many groups and is a popular tourist attraction.

By using the valve insertion method instead of cutting out and replacing valves, city workers complete the valve insertion without disrupting water service to customers.

In the business of operating a small town water system, Smith Center is also somewhat unique in that the water department personnel are ambitious with valve insertion; they have “gone professional” in their approach. The city purchased its own valve insertion equipment several years ago. Water Utility Supervisor Dale Pickle says the city crews have installed about 35 valves in the system since he has been on staff; they installed 17 in just one summer. I think that is impressive – and it’s very progressive.

Many of the city’s original valves were no longer operable. By using the valve insertion method instead of cutting out and replacing valves, city workers complete the valve insertion without disrupting water service to

customers. The new valves have been very beneficial to the city in isolation of the system for leak repairs. While working with the city on unaccounted for water loss issues, KRWA found several fire hydrants leaking without valves in front of the hydrants. It was necessary to shut down several blocks of distribution system to work on the hydrant. With the valve insertion equipment the city has been able to insert valves in front of the hydrants and repair or replace the hydrants without disrupting service to customers.

Benefits outweigh the investment

According to Water Utility Supervisor Dale Pickle, the cost of the equipment was approximately \$27,000. A valve insert set is approximately \$3,300 for an 8-inch valve. There are several service companies that install valves as a service. An average cost is in the range of \$5,000 plus travel and motel charges if needed. Supervisor Pickle says that the valve insertion equipment has been a good investment for the city. The city would have realized cost reductions of about \$43,000 by purchasing the valve insertion equipment verses having a company install 35, 8-inch valves. Although not all the valves installed by Smith Center were 8-inch, the savings



This close up shows a new 8-inch valve insertion. Most of the Smith Center's distribution system is cast iron.

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to the city is still significant. As mentioned, the other main benefit is not having to disrupt water service. The valve insertions have eliminated concerns about valves not fully closing or having the worry of extensive flushing following the insertion method vs. cutting in a valve.

Valve insertion may not be something that every small city water system wants to deal with; it

is not without costs of equipment, materials and labor. But I think that the benefits outweigh the costs. A regular 8-inch valve costs in the range of \$800 plus bolt kits, gaskets and cut-in sleeve adding to the cost.

Every system needs to be monitoring, implementing and documenting and updating a valve exercising program. That is just good maintenance and operations. Valves will last decades if operated at least annually. Not having a valve to be fully operable when needed only makes a bigger crisis out of a problem that is already ongoing. As they say, many of us have "been there, done that!"

Greg Metz joined KRWA as a Technical Assistant in July 2009. He previously worked at the city of Washington for 13 years where he was involved in city utilities including the power plant, streets, water and wastewater. He also served as purchasing agent for those utilities.



Smith Center workers Stacey Colby, James Johnson and John Morgan guide the equipment and tools necessary to complete insertion of an 8-inch valve.