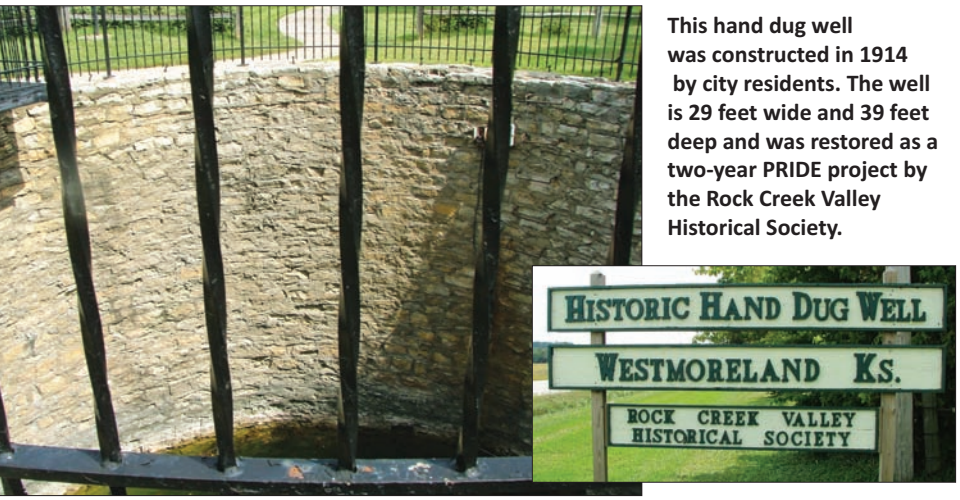
By Delbert Zerr, KRWA Consultant

Westmoreland Makes Improvements to Water and Wastewater Systems

In this photo the jacks are fully extended and workers are ready to install the next ring.

The city of Westmoreland, with a population of about 650, is the county seat of Pottawatomie County located in northeast Kansas. Westmoreland has a very rich history, as the area was part of the Scott Springs campsite located on the Oregon-California Trail. For almost 30 years, from the 1840s to the 1870s, approximately 300,000 pioneers traveled through the area enroute to the California gold fields, the Salt Lake area and the Willamette Valley in Oregon Territory. The pioneers used the campsite to rest and take on water from the natural springs in the area. Westmoreland was surveyed in 1867 and incorporated as a city in 1871.



This hand dug well was constructed in 1914 by city residents. The well is 29 feet wide and 39 feet deep and was restored as a two-year PRIDE project by the Rock Creek Valley Historical Society.

In 1914, as many as forty men labored through the winter months and early spring constructing a hand dug well. Working without the benefit of modern machinery, using only hand tools of pick and shovel, these men constructed the first city water well which is reputed to be the second-largest open hand-dug well in the world. Eventually with many improvements over the years the city found themselves with a water source consisting of drilled wells. The water however, was quite hard and by 1979, a water softening plant was brought on line. After many years of satisfactory operation with the softening plant, it was apparent that the plant was in need of major rehabilitation or replacement. Following much discussion and consideration; the decision was made to abandon the old plant and connect to Pottawatomie County Rural Water District No. 4.

Distribution and storage

The city now has a good source of water as the rural water district produces good quality water using reverse osmosis membranes to treat ground water. However, the distribution system and storage needed attention. The entire distribution system was replaced with PVC pipe in 2001-2002. The next improvement to consider was storage.

This replica of an oxen, prairie schooner team marks the location on KS Highway 99 south of Westmoreland where pioneers camped on the Oregon Trail. Scott Springs is located in the area.

Workers with Bestore Construction, Lenexa, KS add a panel to the tank. Bestore was a subcontractor on the project. M & M Utilities, Chillicothe, Missouri was the prime contractor.

Like most small cities, a 50,000-gallon elevated storage steel tank had been in use for many years. With the maximum daily water usage of 75,000 gallons exceeding the amount in storage, with the community continuing to grow, and the need for additional fire protection, the city felt a need to make their system more dependable by providing more storage capacity.

The consulting firm of Bartlett & West, Inc., Topeka, was retained to explore alternatives and eventually prepare a design for the new tank. City officials decided to have a new 317,000-gallon tank erected on a hilltop located about one-half mile to the northwest of the town. They chose a glass-lined tank because these tanks are advertised as requiring less maintenance than steel tanks. The tank is a ground level glass-lined tank provided by the Fusion Tank Company. As advertised on their website, Fusion's Glass-Fused-to-Steel finish combined with its modular design and build concept provides flexibility of design and will accommodate future changes such as extending the tank to increase capacity or dismantling and relocating the tank. The Fusion Company advertises that Glass-Fused-to-Steel tanks combine the strength and engineering flexibility of steel with the corrosion resistance of glass. The tank was designed with separate inflow and outflow pipes to hopefully achieve better mixing of the water in the tank. Utility Superintendent Robert Krohn noted that with the extra capacity in the new tank, added attention would be needed during the summer months to move water in and

These photos show the front and back sides of the tank as construction begins with the first two rings. When completed, 13 rings, each 54 inches in height, will be needed to reach a height of 61 feet. The other photo shows the overflow and a safety cage that will be seen from the side opposite the majority of the city.

out of the tank to prevent loss of chlorine residuals. This project also included 2,800 feet of 8-inch PVC pipe to connect the new tank to the existing distribution system. Plans are to have the tank in service by early spring 2010, as construction has been delayed due to weather. The project also included teardown and removal of the old steel tank.

CDBG and USDA provide the funding

This project had a price tag of $713,460; funding was provided through a Community Development Block Grant (CDBG) from the Kansas Department of Commerce and USDA Rural Development. Both funding sources provided equal amounts of $356,730. Customer water rates prior to this project were $19.25 per month for the first 1,000 gallons plus $4.25 per 1,000 gallons thereafter. Water rates currently are $20.00 per month base charge with no water plus $5.00 per 1,000 gallons used.

In addition to needing improvements with the water system, the city also recognized the need to make improvements to the sewer system. Several improvements were made to the collection system including the replacement of about 2,100 feet of sewer main that had required regular maintenance and/or was identified as problem areas with smoke testing. Kansas Rural Water Association Wastewater Tech Charlie Schwindamann assisted Robert with the smoke testing. Also, three existing manholes were replaced; four new manholes were added to the system. Finally, 20 existing manholes that were buried an average of two feet were extended to the surface. This project also included improvements at the wastewater treatment plant. Another cell was added to the plant increasing capacity to accommodate future growth in the city. Present sewer charges are $19 per month.

City officials and staff are to be commended for recognizing the need for infrastructure improvements and following through with projects. These improvements should provide adequate service to the citizens of Westmoreland for many years.

Bert Zerr is currently a consultant with KRWA. He has been with KRWA for the last four years. Bert held the position as District Engineer with the KDHE in the Salina District Office for 32 years prior to that.