



City of Effingham, KS Makes Upgrades to Its Water System

The city of Effingham is a small town in Atchison County in extreme northeast Kansas. It has a population of 535 people and a water system that serves 256 services.

Because of its ailing water system, the city decided to pursue a Community Development Block Grant to make improvements. The city was successful in its grant application to the Department of Commerce and received approval of a \$400,000 grant in early 2009. Effingham was also approved for a loan from the Kansas Public Water Supply Loan Fund in the amount of \$740,812.69. With \$1,140,812.69 to work with, the city has made many upgrades to the water system.

The city's water system is supplied by three wells. These wells have the capability to produce a combined total of 112 gpm. All three wells received new heads and a new pump was also installed in Well No. 1. A new chlorination building was constructed adjacent to the wells. Haynes Equipment of Olathe, KS supplied the

chlorination equipment. A three-pump skid injects chlorine. The city is presently using twelve percent sodium hypochlorite. There is also a two-pump skid to feed polyphosphate. Polyphosphate is added to help keep iron in suspension. Without this, there is a high possibility of Effingham users having a "red" water problem. The city's master meters, as well as the telemetry system, are located in the same building. A generator was also purchased to operate the wells in case of power outage.

The city contracted with Maguire Iron from Sioux Falls, SD to erect a new single pedestal, water storage tank. It has a capacity of 100,000 gallons. The town's previous tank was a 50,000-gallon elevated tank. It continues to provide additional storage for fire protection, however it was drained for the winter months. The new telemetry system was assembled by Micrologix; it was manufactured by the Allen-Bradley Corporation.

The project consultant was Kramer Engineering, Topeka, KS.

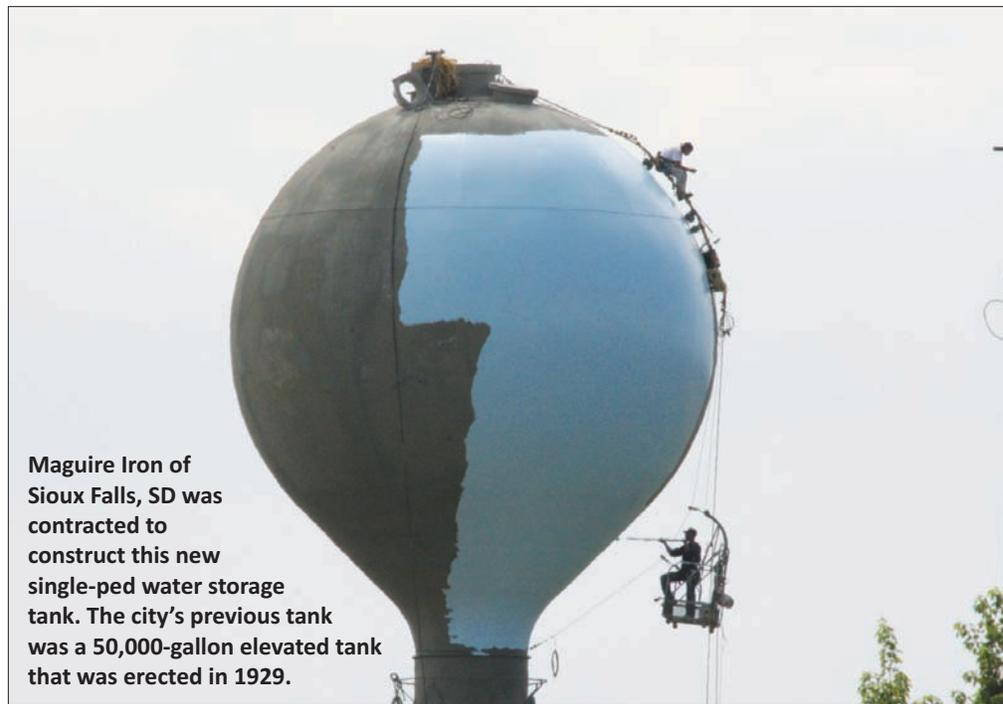
The next phase of the upgrade was to replace a portion of the distribution system. Engemann Drainage Co., Inc. of Troy, KS, installed the new pipelines, valves and hydrants. They installed 415 feet of 8-inch PVC, 3572 feet of 6-inch PVC, 1150 feet of 4-inch PVC, and a short 10-foot section of 2-inch for a flush hydrant. They also installed twelve new valves and eight new 6-inch fire hydrants. Locator wire was installed with all new pipelines. This will allow the operators to locate lines much easier and faster in the future.

Most recently, the city decided to replace their old service meters. Some of the meters were almost twenty years old. Water Products, Inc., McPherson,

The new meter technology decreased the amount of time it takes for city workers to read them. The time required to read meters was reduced from two days to four hours.

KS supplied the new meters. They are 5/8-inch Sensus meters with Touch-Read. The new meter technology decreased the amount of time it takes for city workers to read them. The time required to read meters was reduced from two days to four hours.

The city implemented a new water rate to amortize the costs of the system upgrades. The rate adjustments include a water service fee of \$25. The first thousand gallons of water costs \$5; the cost of all water used in excess of the first thousand gallons is billed at \$4.80 per thousand. Although the city's unaccounted for water loss has been relatively low, the decision to replace the old distribution system will help to



Maguire Iron of Sioux Falls, SD was contracted to construct this new single-ped water storage tank. The city's previous tank was a 50,000-gallon elevated tank that was erected in 1929.

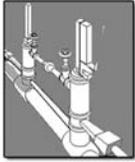
ensure that it stays low. Effingham's water loss report for 2010 showed a twelve percent loss.

With the advice of the city's attorney, a new fence was constructed around the city maintenance shop. With an inventory of valuable parts stored at the shop, the fence will help

safeguard the parts and equipment. It will also reduce any liability of the city for any injuries that could occur on the city's property.

Operator Montre "Buzz" Faught says that having the master meters, chlorination pumps and PLC control system centrally located in one

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- LINE TAPPING**
2"- 60"
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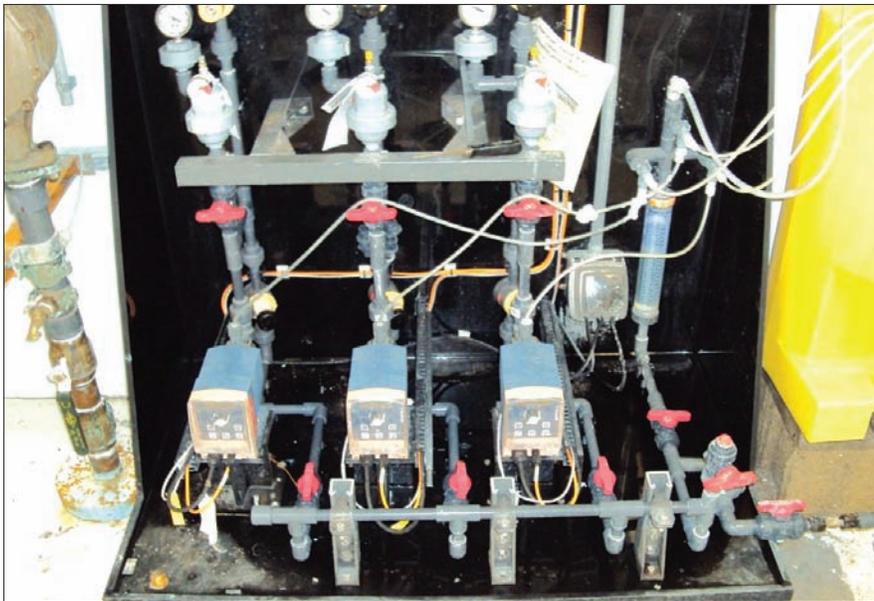
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These three pumps are mounted on a skid; they provide for the injection of liquid chlorine to the Effingham water system.

building has simplified the troubleshooting process for the city water system. Faught added that the new well heads were necessary to ensure the safety of the city's water supply.

Effingham's new water storage tank and system improvement bode well for one more small Kansas town that

**Effingham, Kansas
took the steps
necessary to plan
for the future.**

took the steps necessary to plan for the future. Often, local governments can be reluctant to embark on making improvements due to potential costs and possible rate increases. The 2011 KRWA conference, March 29 – 31 in Wichita, offers numerous sessions concerning funding programs that are available to cities and RWDs in Kansas. The exhibit hall will be filled with products and services for water and wastewater utilities. Help make a difference in your community by attending and learning how to make the necessary investments to help your community sustain quality water and wastewater services.

Tony Kimmi has worked as a Tech Assistance for KRWA since October 2009. He has extensive experience in the operation of construction equipment.



He has assisted in the construction of several rechlorination stations and ongoing monitoring of water quality issues. Tony enjoys providing assistance to public water supply systems.

 A large water tower with "PONCA City" written on it. An inset image shows a smaller water tower being worked on by a crane.

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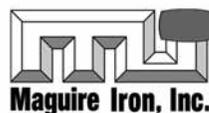
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