

# City of Inman makes water system improvements

Placing the top on the tank drew many bystanders with their digital cameras clicking, mine included. The city's old tank is in the background.

The city of Inman, located between Hutchinson and McPherson on Highway K-61, has made some long-awaited improvements to their water system. Those include a new storage tank, a new well and more than a mile of new 8-inch transmission line. The city is growing, with nearly 550 services; this is an increase of more than 100 from not many years ago.

Searching and obtaining additional water rights in Ground Water Management District No. 2 has been no small feat. Beginning in 1990, the city was over-pumping their water rights allocation. The city had a 55-million gallon allocation but was pumping up to 65 million. A conservation program, including low-flow showerheads and low-flow faucet device trade-out program helped. Yet, no additional allocation of water rights was available for the city from their existing wells.

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Health and Environment discouraged the idea of using the surface water due to all the impending Safe Drinking Water Act regulations pertaining to surface water treatment. Also, the nearby rural water district did not have capacity to provide meaningful amounts of supplemental water.

There is substantial irrigated farmland in the area but offers to obtain water rights were found too expensive for the city. A study was conducted by city personnel of what was being paid in Kansas for water rights at that time yielded some interesting results. Water rights were being acquired by other municipalities at a cost ranging from \$300 to \$1,100 per acre-foot. A rule of thumb average was in the neighborhood of \$500 per acre-foot. The city had an offer from a water right holder at \$2,500 per acre-foot. The city even offered \$1,700 in one case. I suggested to the mayor that I thought that offer was high; the city rescinded on its offer and continued to encourage water conservation by city users.

In 2004, the city was successful in negotiating for the purchase of irrigation water rights at a reasonable price in what later became a wetlands area immediately east of town. The Department of Parks and Wildlife, along with Ducks Unlimited, had

purchased land and irrigation wells in the area to convert the area into a refuge for waterfowl. The city had an option to sell their water to Ducks Unlimited and recoup all of their expense since they didn't develop and use the water. That was a safety net that turned out to be a good thing since the irrigation well itself and all of the test holes in the area turned out to have iron and manganese in excess of what a municipal system would want.

Due to family health concerns, a local farmer who held irrigation water rights, approached the city with a reasonable offer. An agreement was made between him and the city on the purchase of the rights. After test holes were drilled and the water quality was known to be acceptable, the city finalized the purchase of the water rights and actually paid the owner a little extra above his asking price due to the circumstances – all which was still much less than any previous option. With the purchase, Inman had obtained the additional water it needed for current demand and some moderate growth.

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Clarke Well and Equipment, Great Bend, KS was contracted to drill additional test holes to determine the most suitable location for a new well. The final production well was drilled about a quarter mile east of the original irrigation well.

The new well is located about a mile north of the city's two existing wells. Approximately 6,000 feet of 8-inch C-900 pipe was installed to connect the new well to the city's system.



**Clarke Well and Equipment of Great Bend, KS prepares to test pump the new well at Inman. The new well, connecting pipeline and new storage tank were recently completed.**

According to Mark Goertz of Inman Excavating, the installation of the pipeline was relatively non-eventful, other than a creek crossing and incurring extra depth on two road crossings due to the county's plan to reshape the road.

### **New pedestal tank**

The city's new 150,000-gallon storage tank is a pedestal type. It was constructed by Gerard Tank and Steel of Concordia, KS. The construction of water storage tanks has been somewhat of a fascination of mine. This is not work for the faint of heart. It requires experience and a lot of special equipment, some luck and a great deal of good weather to complete a project.

Due the size and weight, the main bowl of the Inman tank was welded on the ground at the site. The bowl ultimately was in just two pieces – a top and lower half. Then, both were raised into place with a large crane. Placing the top on the tank drew many bystanders with their digital cameras clicking, mine included.

Things have to be just right to successfully set a piece of iron weighing more than 27,000 pounds on top of a 100-foot column. Wind cannot exceed five miles per hour. For this job, the contractor used two cranes: a 90-ton and a 120-ton, both rubber-mounted, to set the sections. A smaller track crane was onsite to move equipment and tools around the job site. Crane operator and job foreman Nick Gerard gave me an overview of the controls inside the large crane. It resembles an aircraft cockpit; it had onboard weather monitoring equipment, gauges of all sorts and computerized boom monitoring devices to indicate aspects such as weight, boom height, angle, calculation of working load based on boom angle and lots of built in safety equipment to prevent boom failure or crane tip-over. A crane operator has to be very skillful and knowledgeable or things can go bad in a hurry; injury or deaths can occur in an instant. Even a small tool or bolt when dropped one hundred feet

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could cause a serious injury.

Another aspect that made the construction of the tank in Inman such a challenge is that it was installed next to the city's old legged storage tank at the busiest intersection in town; it's a cramped location. The old tank is scheduled to come down once the new tank is completed.

The first section of the bowl resembled a funnel without a spout. It was raised into position but a slight

miscalculation in boom angle and crane positioning caused the bowl to hit the boom of the crane before reaching the top of the pedestal so it had to be brought back down. A large notch had to be cut into the side of the tank piece in order to clear the boom since repositioning the crane was a problem due to the street being too close and the weight of the piece at a greater angle could have been a problem.

### Self-funded project

One of the best parts of the entire project is the financial side. Solid planning and good management on the city's part allowed the city to finance the project totally on their own. The total project cost was \$750,000. Inman's water rates are a \$10 monthly minimum that also provides 2,000 gallons of water; the cost of water then is \$1.50 per thousand. Schwab-Eaton, P.A., Manhattan, KS was consultant for the tank. McPherson Engineering and Land Surveying was the consultant for the well and pipeline.

Congratulations to the city of Inman for their successful completion of waterworks improvements.

*Jon Steele has been employed by KRWA as a Circuit Rider since 1995. Jon is certified as a water and wastewater operator. He has more than 25 years experience in public works, construction and industrial arts.*





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