By Lonnie Boller, KRWA Tech Assistant

When the well nearly runs dry . . .

Ongoing Drought Affects Another Small Town in Kansas

Present treatment plant electrical controls are in need of upgrade.

Kansas has its share of water supply issues resulting from extended drought periods. Drought affects both surface water systems and ground water systems, but it's not always so obvious to public water systems that use ground water as a source. The ongoing drought in Kansas is going into the third year in many portions of the state. As a result, many cities and rural water districts have implemented their water conservation plans. Many others are updating or preparing plans. The situation for some systems however is bordering on crisis. This article is about one such small town.

The city of Fontana contacted Kansas Rural Water Association and asked that KRWA staff attend a council meeting on December 10, 2012, to discuss the low production from the city's only water well. Fontana is a town of less than 200 people being served by 90 water service connections. Fontana is located in Miami County in east-central Kansas. The town has had a challenging past concerning water supply and both KDHE District Office staff and KRWA recommended for many years that the city consider obtaining water from the nearby Miami Rural Water District No. 3. Recently, Layne-Western was contracted to clean the well to ensure that the screen was not plugged.

The December 10 meeting was attended by the city council, although the mayor was not able to be present. Representatives of the Miami RWD 3 board of directors also attended. KRWA explained that the production of the well was dropping off. We enthusiastically encouraged the city to make an emergency connection to the RWD. It was KRWA's recommendation to do that immediately. The RWD has a 2-inch pipeline with 80 psi that physically crosses a pipeline in the Fontana water distribution system. A simple installation of a metering pit and a check valve was suggested as the only materials needed. KDHE would be advised of this interconnection. The connection would help provide water to 13 of the users in Fontana, thereby relieving some strain on the city's well which was producing only 17 gpm at the time.

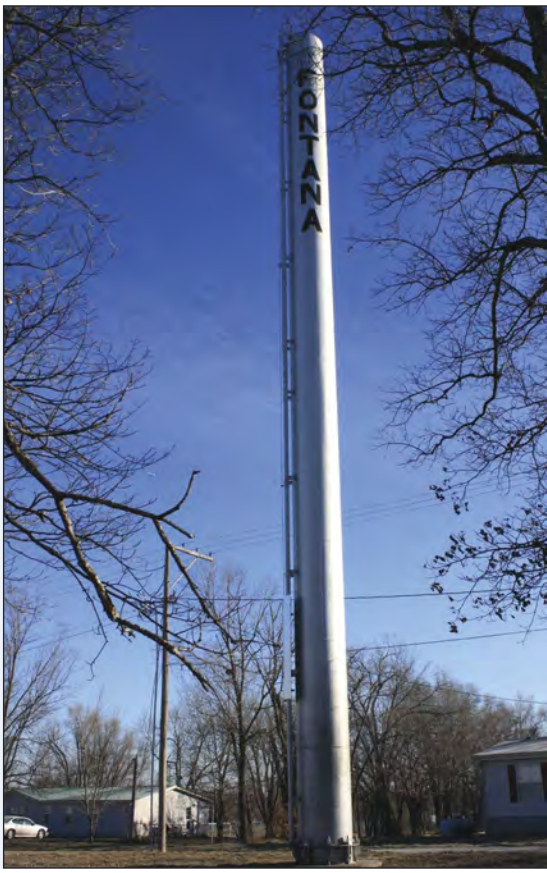
Unfortunately, due to the holidays and the lack of available parts, it took several weeks to get the connection made. There were all sorts of suggestions that the city should apply for an emergency or Urgent Need Grant. To further complicate the situation, during this time, the city had a 15-gallon a minute leak. As a result of not having the interconnection completed, this extra drain resulted in some customers being without any water. With that occurrence, there was only one alternative. The city arranged for the hauling of water to keep up with the system's needs. A total of 60,000 gallons of water was hauled from the nearby rural water district to replenish the city's water storage. KRWA staff spent several days trying to locate the leak. The city had to install additional valves to isolate sections of the system to try to better determine areas of possible leakage. The leak was finally located on a 4-inch transite pipe. Transite pipe is a challenge to repair. Production from the well continued to decline; it was down to only 14 gpm.

The ongoing drought in Kansas is going into the third year in many portions of the state. As a result, many cities and rural water districts have implemented their water conservation plan. Single source systems need to closely monitor their water supply.

Fontana also has very little cash on hand, making the decision more difficult for the city council. And the hauling of water further depleted what funds the city had in its water fund. On December 17, 2012, KRWA staff Tony Kimmi and I again met with the Fontana city council members and the city's engineer to determine the best course of action. To make a permanent connection to the rural

Present system

Fontana's water supply consists of a single well. From there water is pumped to a holding tank and then pumped again to a small iron removal treatment plant with gravel and sand filters, and a small clearwell. From there, water is pumped to a 56,000-gallon ground storage tank and from there is pumped to the city's water tower, which has a capacity of only 7,500 gallons. The city of Fontana recognizes that the plant is in a very poor state of condition. Operation is mostly by manual controls due to lack of necessary upkeep over the years. The plant was constructed in 1978. Because of inadequate revenues, the city hasn't had the necessary funds to make needed repairs. Still the plant effectively removes iron and manganese to acceptable levels. The city still has about $60,000 debt on the plant. Oxidants used in the treatment process have caused severe degradations and rusting of the metal and other components in the plant. The single gravity filter is contained in a steel tank. And as with all other steel components in the facility, the protective coating has failed and rust appears both inside and outside of the filter. Some of the electrical components in the plant have failed and have recently had some repairs made to them. The existing ground storage tank is in fairly good condition but will be in need of recoating sometime in the future. The city's well is approximately 50 feet deep; at times the drawdown level was so severe that only two feet of water remained in the well.



Fontana's standpipe has a capacity of 7,500 gallons. It is supplied from a 56,000-gallon ground storage tank.

water district, the city would have to install 1.5 miles of 4-inch pipeline; one railroad bore would also be required. This certainly appeared to be the best option due to the current condition of the water treatment plant and the low static water level in the well.

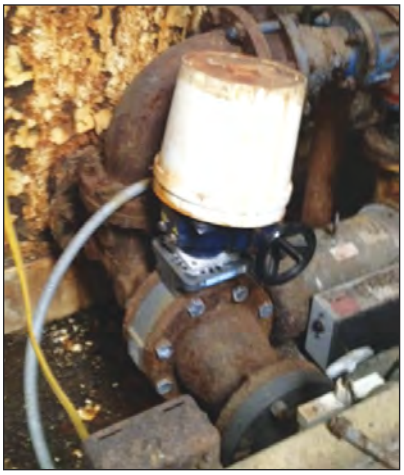
On January 2, 2013, the city was finally able to complete the temporary connection to Miami RWD 3 to serve 13 users. This took some of the burden off of the well. And since making that emergency connection, the static water level in the well has increased several feet and the draw down level has also improved. The city is currently only pumping 17 gallons per minute from their well for approximately eight to ten hours per day. This is allowing the aquifer to recover. However, without a significant amount of moisture, the city is still on very thin ice, so to speak.

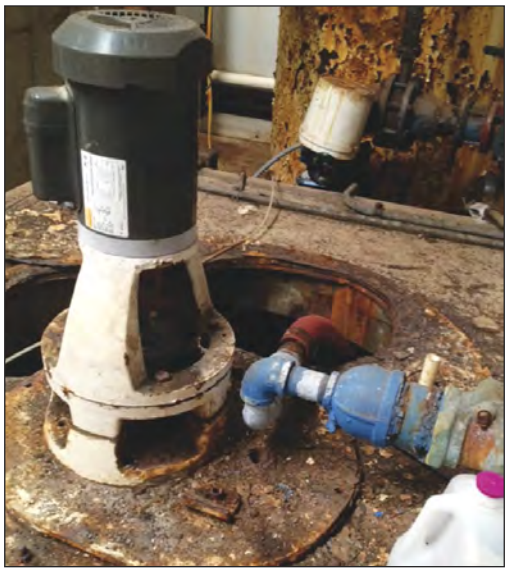
The city is in dire need of funds to make the permanent interconnection with Miami Rural Water District 3. They initially asked for emergency funding for the interconnection and hauling of water but have been declined.

Dave Blankenship, the city's operator, has put in many hours trying to keep the system in operation. Every night and weekend since the water shortage occurred, he has put in many hours for the city, in spite of being just a part-time operator. Dave also has a full-time job working in the city at the local elevator.

The city is currently working with an engineering firm to help the city determine a solution to the problems of low production, poor plant conditions, plant upkeep, and the financing for those solutions.

Unfortunately, when a drought affects a small community, the financial burden can be greater than the city is able to shoulder.





Treatment plant piping and appurtenances need to be wire-brushed, corrosion removed and painted.

What's the lesson?

The situation in Fontana is exacerbated by the current drought conditions. Groundwater experts in Kansas predict many communities will face increasing problems given the lack of moisture to recharge local aquifers. Another factor for Fontana is that on numerous occasions over the past couple of decades, KRWA and KDHE have suggested that Fontana and Miami RWD 3 interconnect to ensure a better water supply for the city. City officials today recognize that past recommendations have not been acted on. And so, the present council has little choice with a near crisis on their hands. But even the present situation should never have happened to the point of having people out of water.

I want to encourage cities and RWDs, and especially the people who serve on city councils and RWD boards, to attend the upcoming Annual Conference & Exhibition in Wichita, March 26 – 28. Yes, it takes time to attend – but by doing so, people can attend sessions of interest, visit with all the funding agencies as each is there to provide help to communities across Kansas – and attendees can gain a lot by just talking to others, many of whom have faced similar issues or have bigger problems than the others. I like the theme, "Let's Pull Together!" Yes, let's do that ... and help make every public water system more reliable. Don't wait until the well runs dry.

Lonnie Boller is a Technical Assistant at KRWA. He has been employed by KRWA since 2001. Lonnie is a Class II certified operator; he previously was Water Plant Supervisor for the City of Horton. He has also attended and completed training at the University of Kansas Law Enforcement Training Center.