

KRWA Assists City of Milford with Rechlorination

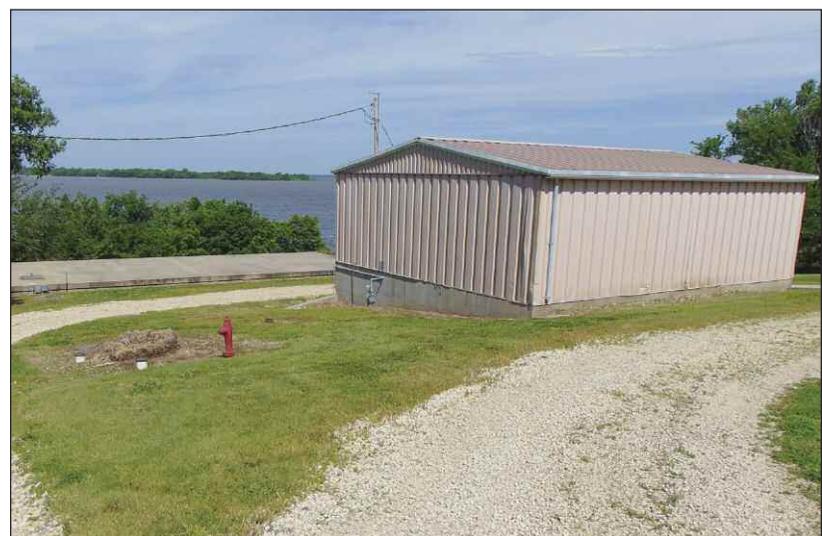
The city of Milford is located north of Junction City, on the east shore of Milford Reservoir. The city owns and operates a public water system that serves 202 connections and approximately 542 people. The city once utilized Milford Reservoir as its source of water with a surface water treatment plant that was constructed in the mid-1960s. In 2012, the city was faced with making the decision to either upgrade its surface water plant or connect to another system. After considering the \$2 million price tag for a new treatment plant, the city made the decision to connect to Geary County Rural Water District No. 4 (Geary RWD 4). Anyone interested in reading more about this change can check out the November 2012 issue of *The Kansas Lifeline*, page 44 or online at <https://krwa.net/Portals/krwa/lifeline/1211/44.pdf?ver=2016-07-11-174950-397>. KRWA Consultant, Bert Zerr, wrote the article about the city's transition to a purchasing system entitled, "Milford Gets New Water Supply Source."

Geary RWD 4 is located to the south, between Junction City and Milford. The district utilizes ground water as its source and operates an iron and manganese removal plant. To control the formation of disinfection byproducts, the district adds ammonium sulfate to the disinfectant to form a combined chlorine residual. State of Kansas Regulations (K.A.R. 28-15-19) require public water systems to maintain a combined chlorine residual of at least 1.0 mg/L throughout the entire distribution system. Water from Geary RWD 4 travels 1.25 miles to the city of Milford's master meter and



an additional 2.2 miles to the city's 150,000-gallon underground clearwell. For years, the city has used an online chlorine analyzer to monitor the combined chlorine residual that leaves the clearwell. Often times, the residual is below the required 1.0 mg/L so the city has been using gas chlorine to boost the residual levels before water enters the city's distribution. But lately the city has been having trouble maintaining chlorine residuals and controlling disinfection byproduct formation. After some discussions with KRWA staff, Bert Zerr and Lonnie Boller, and Consultant, Rob Peschel, CES Group, P.A., of Marysville, Kan., it was decided that both chlorine and ammonia should be added at the rechlorination point to help improve chlorine residuals and not form additional disinfection byproducts.

The city's rechlorination point is currently set up in the old surface water treatment plant building. Water comes out of the clearwell, goes through the chlorine analyzer, chlorine is injected from a gas cylinder, and the water is pumped out to the distribution system. This set up is located in the

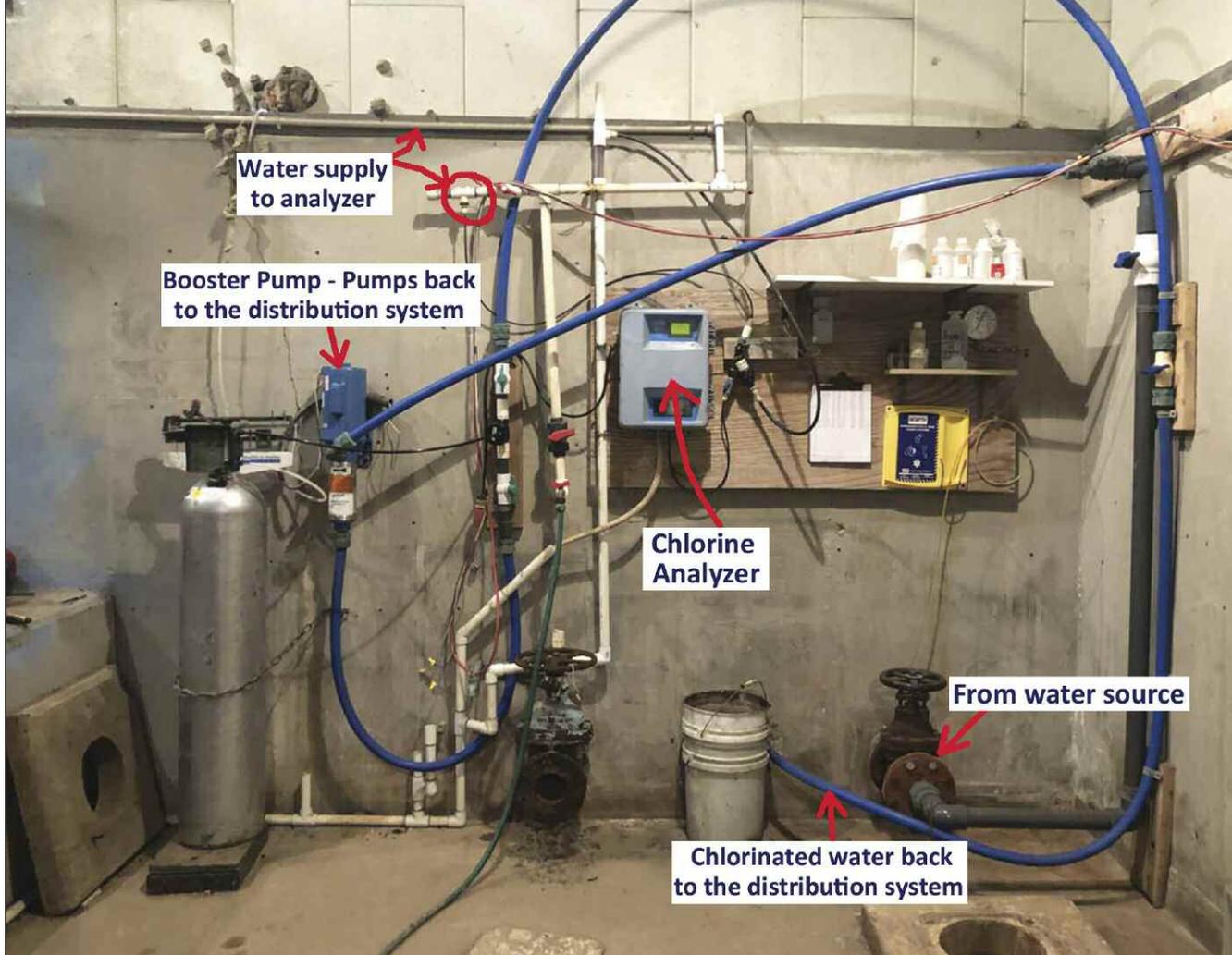


The city's former surface water treatment plant building and 150,000-gallon underground clearwell. Milford Reservoir can be seen in the distance.

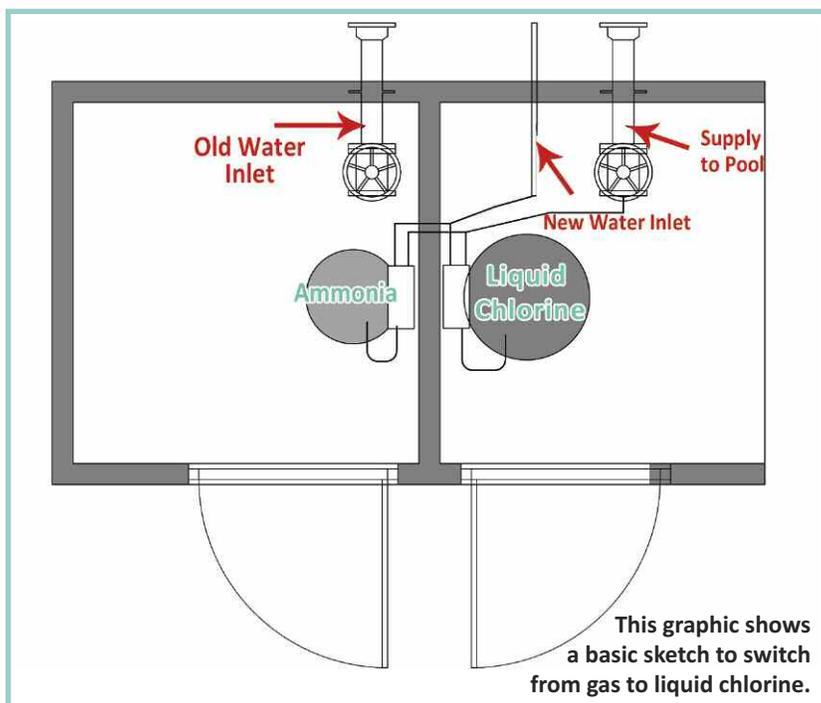


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This photo shows the current rechlorination set-up inside the city of Milford's former surface water treatment plant. The gas chlorine cylinder and the water lines that run along the wall will be removed and new injection lines will be plumbed for the addition of sodium hypochlorite and ammonium sulfate. The new set-up will be inside an enclosed room with proper ventilation.



southeast corner of the building and is not enclosed with a proper ventilation system. The city has been working with CES to develop a plan, which must be approved by the Kansas Department of Health and Environment, to remove the gas rechlorination set-up and transition to feeding liquid sodium hypochlorite and ammonium sulfate to better maintain a combined chlorine residual. Once the plan is approved, Lonnie Boller plans to assist the system with installing the new chemical feed pumps and constructing an enclosed room with ventilation. Look for the conclusion (Part 2) of this article in the November issue of *The Kansas Lifeline*.

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.

