

# Public Wholesale Water Supply District 18 and Rural Development Prove a Project Can Proceed in Quick Fashion



Like most surface water supplies, Banner Creek Reservoir southwest of Holton, KS shows a significant decline in the water level due to extended drought conditions. Banner Creek is the source for Public Wholesale Water Supply District No. 18 and its members, the city of Holton and Jackson RWD 3. Those two systems serve approximately 9,000 Kansas citizens. The water treatment plant is being retrofitted with rapid sand filters, replacing the original membrane filtration.

**O**n February 14, 2012, representatives from USDA Rural Development, the engineering firm of EBH & Associates from Pratt, Kansas, officials of Public Wholesale Water Supply District No. 18 (PWWS D 18), and KRWA met in Topeka at Rural Development's office. The purpose of the meeting was to decide how to fund the replacement of the wholesale district's water treatment plant filtration units.

The wholesale district consists of only two members: the city of Holton and Jackson County RWD 3. The water source for PWWS D 18 is the 535-acre Banner Creek reservoir, located several miles southwest of Holton. The district's water treatment plant was constructed in 2001-2002 at a cost of approximately \$8 million. Membrane filtration was installed at the plant.

## Needed changes in filtration

PWWS D 18's existing plant can meet federal and state regulations. However, the plant cannot produce the 2.0 million gallons per day (MGD) for which it was designed because of the use of membrane filtration. At present, Holton and RWD 3 receive less water than their contractual amount of water from PWWS D 18's treatment plant. To make up the additional water needed, Holton also operates an older water treatment plant in town and RWD 3 operates several wells.

The membrane filtration has been a challenge to operate. The operations have had considerable downtime due to maintenance on the membranes. Also, the use of activated carbon is limited due to its affect on the membranes. The operation of the ClariCone clarifiers has not been



optimum due to the impact of having to treat water at a lower flow rate.

For those reasons, the wholesale district chose to replace the membrane filtration with conventional, rapid sand filters. For many years, the city of Holton has successfully operated rapid sand filters at the city's surface water treatment plant in town. PWWSD 18's treatment plant and rapid sand filters were sized to ensure the 2.0 MGD plant flow rate. Rapid sand filters are used in almost all surface water treatment plants in Kansas and for good reasons. According to Pat McCool, KRWA Consultant, the rapid sand filters will result in less water loss, lower operational costs, and smoother, consistent plant flow rates.

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John Tillman of the Ray Lindsey Company; Darin Neufeld of EBH & Associates; Dennis Ashcraft and Kirwin McKee of PWWSD 18; Dan Fischer of USDA Rural Development; Don Hellar with EBH; Sam Eck, Craig Galle, Curt Martin and Matt Miller with Utility Contractors, Inc., gathered for this photo in the PWWSD 18 plant southwest of Holton, KS.

### Other improvements

In addition to the switch from membrane filtration to rapid sand filters, the project will include installing an underground chlorine contact pipe loop to be used for free chlorine contact time and disinfection compliance. The existing chlorine contact basin will then be used as an additional ground storage clearwell.

A static mixer will be installed in the raw water line into the plant. New transfer pumps will be installed to deliver water to the groundwater storage tanks. Additional chlorine and ammonia addition feed points will be installed. Also, new controls and SCADA changes will be provided to address the changes and new systems.

### Project construction, financing

The total project cost is estimated at \$2 million. The treatment plant was taken offline in the first week of

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PWWSD 18's original membrane filter system was installed in a new plant in 2002. By late Spring 2013, the district will switch from the membranes to conventional rapid sand filtration.

February for 60 days to complete construction. During that time the city of Holton and Jackson Co. RWD 3 are relying solely on their other water supply sources. The shutdown was planned for this time of year because water demand is not high. Contractors for the project are Utility Contractors,

Inc., Wichita, and Ray Lindsey Company, Lenexa, KS.

The financing of this project is one of the fastest in Kansas! USDA Rural Development was able to finance this project in approximately 45 days from the date of application. USDA Rural Development's letter of conditions was

given to the wholesale district on June 14, 2012, obligating the funding needed for the project.

The wholesale district's operations manager, Dennis Ashcraft, and the project engineer, Don Hellar, estimate that there will be a significant cost reduction from that historically spent on chemicals and on water used in backwashing filters. Also, the wholesale district was able to refinance a portion of its existing debt with Rural Development at a lower interest rate. Presently, the project is being accomplished with no water rate increases anticipated. It is hoped that the costs savings in chemicals, in backwashing, and in lower interest rates will cover most or all of the additional debt payment.

**Both the city of Holton and Jackson RWD 3 have experienced a slow, steady growth in population over the past 20 years.**



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Both the city of Holton and Jackson RWD 3 have experienced a slow, steady growth in population over the past 20 years. Continued growth is anticipated due to the close proximity to Topeka. Thus, the installation of the rapid sand filters ensures that the original plant capacity of 2.0 MGD can be produced and that water demand can be met for many years into the future.

I plan to cover the completion of this project in our July issue of *The Kansas Lifeline*.

**Let's Pull Together!**

Just as PWWSD 18, the city of Holton and Jackson RWD 3 are pulling together to help ensure a long-term water treatment project, I hope that KRWA will also be able to help other systems as they evaluate and consider improvement projects. KRWA's Pat





The new filters arrived at PWWSD 18 on Thursday, January 31. The filters were purchased from WesTech Engineering Inc., Salt Lake City, UT. There are four individual filters inside the single module. Three of the filters will be able to treat the design flow of 1.5 MGD. There will be a clearwell installed under the filter. The cost of the filters and clearwell is \$580,000. Utility Contractors of Wichita is the general contractor on the project. Utility Contractors will remove the existing membrane filtration system and install the new sand filter system. The total cost of the project is approximately \$1.6 million. The projected completion date is April 1, 2013.



McCool visited early with the project owners to help discuss experiences of others and options to consider. I encourage anyone who has questions about surface water treatment to contact KRWA. There are few sources of information with the level of expertise and experience that KRWA staff members Pat McCool, Jeff Lamfers, Delbert Zerr and Lonnie Boller provide. And that assistance is provided at no cost to systems as the Association receives some funding assistance through a contractual agreement between the Kansas Department of Health & Environment, PWS Capacity Development Program, State Revolving Fund and KRWA.

### See you in Wichita!

I also want to I encourage everyone to attend the upcoming Annual Conference & Exhibition at Century II Convention Center. The program is reprinted in this issue; it's also posted online at [www.krwa.net](http://www.krwa.net). Attending this conference is not an expense; it's a good investment of time that any water or wastewater system can make.

*Rita has extensive municipal experience with the city of Troy, KS for eleven years. She was a certified EMT and served as the Ambulance Director for two years and supervised the volunteer staff. Rita also worked on or completed most water and wastewater utility reporting requirements. Her focus at KRWA is to provide assistance with applications for funding for cities and rural water districts.*





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