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Creston Water Works Membrane Pilot Study Nearing Completion



The Creston Water Works (CWW) owns and operates a water system that serves all of the city of Creston as well as a significant portion of the Southern Iowa Rural Water Association (SIRWA). The

surface water treatment plant was built in 1984 and expanded in 1990. Changes in drinking water regulations and increased demand from SIRWA created a need for CWW to consider how to expand and upgrade its facilities. FOX Engineering was retained by the CWW and SIRWA governing boards to assist them in their pursuit of improved service to their customers.

FOX Engineering prepared a facility plan that evaluated several options for increasing treatment plant production and for improving performance and compliance with current and anticipated water quality standards. Based on the facility planning effort, the Boards agreed to work toward implementation of a water treatment plant upgrade that incorporated membrane filtration into the treatment process. This advanced technology was believed to be advantageous to the water utility and its customers in the long run, even though it may be slightly more expensive initially.



The first phase of implementing the membrane filtration treatment process involved conducting a pilot study. Since July of last year, Creston Water Works, with assistance from FOX Engineering, has been operating two submerged membrane pilot units. One pilot unit utilizes microfiltration membranes, while the other unit utilizes ultrafiltration membranes. The purpose of the pilot study is to demonstrate that the membrane systems can feasibly and economically produce treated water that will meet drinking water standards and water quality goals. This involves determining design and operating parameters, such as filtrate flux, system recovery, backwash and cleaning intervals, and types of cleaning chemicals, that will provide stable membrane

performance and serve as a basis for full-scale design. FOX Engineering has provided assistance in evaluating the performance of the pilot units and review of operational data. The pilot study is scheduled for completion at the end of May.