



City of Gridley Works on Wastewater System Issues; Receives Schedule of Compliance from KDHE

The Kansas Rural Water Association (KRWA) has been under contract with the Kansas Department of Health and Environment (KDHE) since 2009 to provide assistance to wastewater systems. An additional contract is operated by KRWA with funding provided through the National Rural Water Association for similar services. Funding for that program was initiated in 1993 and originated with USDA Rural Development. Most requests for technical assistance from wastewater utilities come to KRWA as direct requests from systems, however, the KDHE contract requires that the referrals be made by the agency. The KDHE referrals are those that the agency identifies either by the agency staff, system requests or through KRWA's efforts and are a first measure to bring the systems back into compliance. This is usually done without the need to hire an engineer such as required with a "Schedule of Compliance", which KDHE will include in the system's permit and requires the system to take steps to address the problem.

KRWA has been successful in helping many systems return to compliance. Some referrals are to assist operators to become certified. Other systems may have failed the discharge permits. Frequently, such systems can be returned to compliance by modifying how samples are collected. Sometimes it's a change in operations of the treatment system that helps bring the system back into compliance. But some cannot be brought into compliance because of system design or capacity. It is at this point that KDHE can and often does include a schedule of compliance when reissuing the system's permit. The schedule of compliance will usually begin with the system being required to hire an engineer.

In December 2016 KRWA received a referral letter from KDHE due to the past failures of Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS) at the city of Gridley. Gridley is located in east-central Kansas about 40 miles southeast of Emporia on Highway 58. According to the 2010 census, Gridley has a population of 340. The city has 150 connections to the sewer system. The city's wastewater collection system is all gravity, has no lift stations, and has a 2-cell discharging lagoon system covering 3.5 acres. The design is for 38,000 gallons per day with a design population equivalent of 381.



Photo at top left shows forty feet of main that was replaced; the original pipe failed because it was not bedded. Bedding was added to this section.

Bedding or padding of the pipe should be done from at least four inches below the pipe to six to twelve inches over the pipe to prevent settling and provide a barrier between the pipe and other fill material (photo bottom left).



A fiber optic installation damaged this sewer line. The problem was located during televising the system; the city repaired the problem.

Gridley has had a few issues with infiltration and inflow, with backup incidents into customers' homes. The city contacted KRWA to conduct a smoke testing and sludge profile in 2016 due to several failed discharge permit limits. One was a 39 mg/l of BOD; two samples failed the TSS limit with results of 92.5 mg/l and 126 mg/l.

KRWA conducted a sludge profile in May 2016; we found the loss of capacity in the primary cell to be 21.62 percent and 19 percent in the discharge cell. The heavy sludge averaged about seven percent in each cell. The loss of capacity due to sludge was not enough to cause concerns that sludge be removed immediately, but that sludge removal should be anticipated in the future. I recommended that the entire sewer system be cleaned and televised to find issues that smoke testing would not reveal. The city took the advice and in late summer 2016 had the entire collection system cleaned and televised. Many issues were found. As a result, 500 feet of sewer main was lined

In November 2016 KRWA completed the smoke testing of the collection system. That project found 22 inflow and infiltration (I&I) issues. They included four cleanouts, four manholes, nine service lines and five other issues. There were more manhole issues due to large holes in the lids; KRWA recommended the holes be sealed to reduce inflow during rain events. No main line issues were detected as is the case sometimes due to high water table level, or soil type. This is why smoke testing is just part of the collection system evaluation along with cleaning and televising. I believe cleaning and televising should be done of the entire system. That effort can be done as a single project or be spread over several years, e.g., to complete one-third per year for three year to help with budgeting. KRWA also recommends manhole inspections be completed to help ensure all



This photo shows two fiber optic conduits that hit the main; repairs were made by the city.

manhole lids are sealed and that any leaks through sidewalls or connections to manholes are addressed.

I met with Gridley Mayor Lawrence Kelley, City Clerk Cheryl Dornes and Operator Brian Isch in January 2017 to discuss the issues identified in the referral letter from KDHE. KRWA submitted a followup letter to the city; the letter was copied to KDHE and USDA Rural Development as KRWA does with all such letters that are provided to systems. Such followup letters typically include a report on progress that has been made to that date. The letter to Gridley included mention of the sludge profile, smoke testing, cleaning and televising of the system as well as referencing the project by the city to line or replace more than 1,000 feet of main. The city has been very proactive to make repairs even before the referral was made by KDHE – and the city continues to do so.



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This photo shows the repaired line. The telecommunications company was notified but refused to pay for the damage as they suggested too much time had elapsed since the date of their work.

KDHE gives notice to city

Unfortunately, the city received a letter in August 2017 from KDHE that their permit, which renews in April of 2018, will include a Schedule of Compliance. The Schedule of Compliance will require the city to hire an engineer by June 2018. The engineering report is to be completed by December 2018. As I mentioned Gridley has been very proactive and had already met with an engineering firm in February 2017. They have contracted with a consulting firm for a preliminary engineering report that will be submitted with the USDA Special Evaluation Assistance for Rural Communities and Households grant. That funding is commonly known as a SEARCH grant; the grant pays 100 percent for the Preliminary Engineering Report for entities that have projects that meet the grant criteria. The estimated cost for the preliminary engineering report is between

\$6,000 to \$8,000. I hope the cost will be on the lower side because the city already has cleaned the sewer lines, the system has been televised, smoke testing has been conducted and sludge profiles were completed.

Gridley staff have been discussing lining the sewers and adding another cell to allow the system to be changed to non-discharging. I agree with these options, as there will most likely be more regulatory limits, possibly for ammonia and phosphorus, in the next several years. The city is not sure at this time what the recommendations will be until the preliminary engineering report is completed.

Unfortunately, Gridley was not able to escape having a Schedule of Compliance added to their permit. They have been very proactive in working towards meeting permit limits and have made repairs to their facilities. Usually this proactive approach does allow for meeting permit limits and the system is then removed from KDHE's referral list for technical assistance. However in this case at Gridley, the prior work apparently was not adequate to avoid the schedule of compliance. Still the city's efforts to address problems is to be complimented for being proactive and for the improvements that have been made.

Charlie Schwindamann has been Wastewater Tech at KRWA since September 1999. Charlie holds Class II Water and Class I Wastewater Operator certification. He is a member of the Marysville, KS city council.



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KRWA encourages you to visit www.krwa.net for training opportunities in your area!

February 6 - 7, 2018	Cross Connection - Backflow Prevention (Information Only)	Liberal (Girl Scout Building)	\$0.00	Details
February 8 - 9, 2018	Cross Connection - Backflow Prevention (Recertification)	Liberal (Girl Scout Building)	\$10.00	Details
February 15, 2018	Complying with Drinking Water Regulations (Garden)	Garden	No Charge	Details
February 20 - 21, 2018	Activating a New Water Meter	Creek Water Quality Facility	\$0.00	Details
February 22, 2018	Coaching Your Community Through Rate Increases (Park City)	Park City	No Charge	Details
March 6-7, 2018	Cross Connection - Backflow Prevention (Information Only)	Topeka (Water Treatment Plant)	\$0.00	Details
March 6-9, 2018	Cross Connection - Backflow Prevention (Full Certification)	Topeka (Water Treatment Plant)	\$120.00	Details
March 8 - 9, 2018	Cross Connection - Backflow Prevention (Recertification)	Topeka (Water Treatment Plant)	\$120.00	Details
April 10, 2018	Water Operator Certification	Topeka (Water Treatment Plant)	\$120.00	Details
April 10, 2018	Wastewater Operator Certification Training	Salina	No Charge	Details

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