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FAX 785/336-2751 • http://www.krwa.net

May 18, 2009

Jim Ludlow, Jr.
City of Soldier
209 Francis St.
Soldier, Kansas 66540

Re: Recent Visit to Discuss Operation of
Soldier's Public Water Supply System
(Operator-In-Training Visit)

Dear Jim;

I appreciate the opportunity to meet with you on May 12 to discuss operation of Soldier's water system. I know we discussed many issues during my visit and hope you were not overwhelmed. It was obvious that Joe Denny had done a good job of providing you some training prior to his departure. Regardless, you should now have a variety of reference materials that will help in answering most questions that arise. You can also call me if you need additional assistance.

Daily Chlorine Residual Monitoring

K.A.R. 28-15-19 requires all public water supplies to monitor chlorine daily to ensure adequate residuals are maintained throughout and at the far ends of the distribution system. This regulation also requires the city to maintain a minimum combined residual of 1.0 mg/l. A review of your daily residual log confirmed that adequate residuals are being maintained. I suggest selecting several different locations throughout town, possibly one for each weekday. Monitoring at your own home on the weekends is acceptable. You should also begin monitoring occasionally at the point where water is purchased from Jackson RWD 3. Monitoring in this manner will help develop a "residual history" for each area of your system. As you know, chlorine can be monitored outside homes if necessary, including yard hydrants, fire hydrants and other convenient locations. Your daily logs do not need to be submitted to KDHE, but will be reviewed by their field staff when conducting sanitary surveys of your system.

Collection of Bacteriological Water Samples and Developing a Sample Siting Plan

A handout was left with you detailing the procedure to following when collecting these water samples. It is most important that samples be collected following this procedure to ensure they are not contaminated during the collection process. Samples can only be collected on Monday, Tuesday or Wednesday each week. You must also avoid collecting samples on holidays. Samples should be collected late in the day, shortly before mail leaves the post office as all samples must reach the KDHE Laboratory within 30 hours. Samples must

be collected indoors at locations that do not have point-of-use treatment devices such as water softeners or carbon filters. The enclosed sample submission card should be completed making sure to include the time and date of collection. Without this information, the sample will not be analyzed.

As we discussed, you also need to develop a written Sample Siting Plan. KDHE recommends such plans have a minimum two zones and five representative sampling locations within each zone. The plan should then be used to determine where to collect your twice-monthly water samples. You should alternate between zones, rotating through each of the five locations within each zone. The purpose of these plans is to ensure that all parts of the distribution system are sampled during the year.

Routine Flushing of the Distribution System

It is important that distribution system mains be flushed on a routine basis. Many systems flush twice per year; however, the frequency of flushing can vary from system to system. Line flushing is good policy as it helps keep the lines clean and brings fresh chlorinated water into areas that may have low residuals from time to time. It should be noted that many systems across the state have experienced some difficulty in maintaining minimum residuals during warmer months of the year due to inadequate mixing of water in their storage tanks. Such a situation may require overflowing the tower to restore adequate residuals. We recommend you pay close attention to areas of low flow and dead end mains and flush as needed to maintain adequate residuals.

Locating and Exercising Valves

Valves should be exercised on a routine basis to insure they will work when needed. It is important that as little of the distribution system as possible be shut down when repairs are needed due to main breaks. Hopefully the city can isolate the break to a 2-3 block area and inconvenience as few customers as possible. The chance of contamination is greatly increased during times when there is little or no pressure in the system.

Operator Certification

The level of certification needed to operate Soldier's water system is at the Small Systems (SS) level. You will need six months of on-the-job experience to be eligible to take the examination. To assist you with the operation of your water system and to prepare to take the certification examination, I suggest reviewing the *Kansas Small Water Systems Training Manual* that was sent to you by KDHE. I also left you a copy of the *Operator's Handbook* prepared by KRWA. During our next visit I will also provide you copies of the water treatment and distribution system study guides. Finally, we encourage you to take advantage of the various training opportunities held across the state and the online quiz section on the KRWA website. The KRWA website can be found at www.krwa.net.

If I can ever be of assistance, please feel free to call me at 913-850-8822. Funding for the above assistance was provided through a contractual arrangement between the Kansas Department of Health and Environment (State Revolving Loan Program set-aside) and the Kansas Rural Water Association (KRWA).

Sincerely,

Jeff Lamfers
Consultant

c: Penny Ludlow, Mayor
Vickie Wessel, KDHE-Topeka
Helen Holm, KDHE-Lawrence