

# Greensburg has lesson for emergency response planning

I attended a training session on April 11-13 of this year titled “Environmental Health Training in Disaster Response” sponsored by the Kansas Environmental Health

Association. I have attended National Rural Water Association training sessions on emergency preparedness and response at in-services and National Conferences the past two years. I have helped 96 water systems prepare an emergency water supply plan and completed 54 water system vulnerability assessments over the past couple of years; many of those were completed just one year ago. I have had several meetings and numerous phone conversations with Kansas Department of Emergency Management (KDEM) over the

last year on KWERN (Kansas Water/Wastewater Emergency Response Network).

The last meeting at KDEM was held on Friday, May 4. The main agenda item was to finalize the paperwork to get KWERN started.

We completed the meeting at noon feeling that KWERN would be of great benefit to water and wastewater systems in Kansas during an emergency. Little did we know at the time that disaster would strike Greensburg just nine hours later. In this article I would like to recap KRWA’s work at Greensburg.

## Week One, May 6

KRWA was in contact with Kansas Department of Health and

Environment (KDHE) on Saturday, May 5. KRWA General Manager Elmer Ronnebaum had several phone conversations with Clyde Zelch of Tomcat Consultants in Rosebud, Missouri. Clyde is the only resource KRWA is aware of who can provide an on-site pressure and supply tank. It seemed that such a resource would be needed in Greensburg. While the main concern was search and rescue at the time, KDHE and other state and federal agencies were made aware of this supply tank and KRWA’s offer to be of assistance as appropriate. KRWA contacted the Kansas Department of Emergency Management (KDEM) Office in Topeka; KRWA left messages at the phone

numbers that are recommended to be called. The phone lines were busy at KDEM, but our message was left with the hundreds of other calls received that day. I placed a call to my contact at KDEM and talked to him and told him of the supply tank and to offer assistance.

KRWA received a mission identity from KDEM on



*Above right: Clyde Zelch, Tomcat Consultants, Rosebud, Missouri, provides portable supply/pressure tanks for use in public water systems. At Greensburg, this tanker has provided excellent service with the lack of any other water storage. Above: One of the few structures with much left standing on the northwest side of Greensburg is flanked by trees that did not fare much better.*



*Jim Jackson  
Tech Assistant*

Wednesday, May 9 to provide assistance and coordinate restoration of Greensburg water and wastewater utilities. Upon arriving in Greensburg I caught up with Kansas Municipal Energy Agency (KMEA) lead Bill Callaway. Bill is a very capable



manager of the Board of Public Utilities in Clay Center, Kan. Bill, in concert with other KMEA members and the city of Greensburg, asked that KRWA coordinate help for the public water system.

The first objective was to protect as much of the system as possible. KRWA's Lonnie Boller stopped in Cheney and purchased every steel fence post he could find and many cans of blue spray paint. We drove a fence post by as many fire hydrants as possible; we then shut off and marked all the meters we could find. There had already been some damage to several hydrants and meters from both the storm and by debris cleanup crews. Given the experience of others during other major tornados, the concern was to not have more hydrants pushed

into debris piles. More damage is often likely to the water system during cleanup than the event caused in the first place.

We also started locating valves and marking them, again to protect them and also for use when restoring service. We could only find one map of the distribution system, as many of the maps were unaccounted for. We had maps of streets and well locations generated by KRWA Mapping and

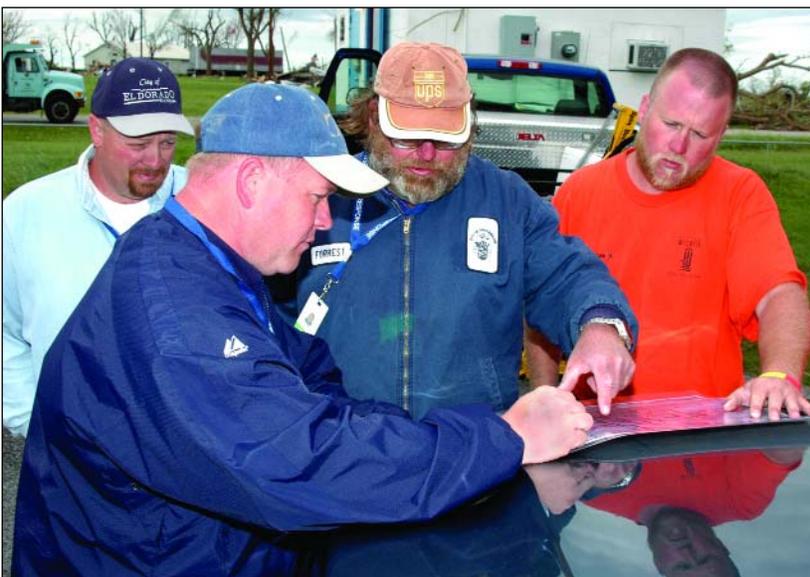
sent overnight to help with our efforts on doing locates, as street signs were gone or not visible. We learned that City Well No. 9 on the north end of town would be the water supply source for the city once repairs were made to the well and electricity was restored. FEMA planned to place trailers for residents on the south end of town. A plan was developed to get water to where it was needed. Layne Western had ordered parts needed



*Left: Better to have this steel stake marker bent than the hydrant to be hit by cleanup crews. KRWA and KMEA members located more than 1000 water meters, hydrants and valves in Greensburg to hopefully prevent further damage to the system.*

*Above: A hydrant that wasn't so lucky suffered the indignation of being yanked from the ground by a debris cleanup crew before the marking began.*

*Below: KRWA Tech Jim Jackson, front, refers to a city map for valve locations with water workers (l to r) Gary Taylor, El Dorado, Forrest Huffman, Greensburg and Dave Craddock, Wichita.*



## Greensburg has lesson for . . .

to get a variable frequency drive (VFD) functioning and KMEA was already working on getting power to the well house. Power was restored on Friday and the well could be run but the VFD was not functioning correctly.

### Week Two, May 13

We began the week of May 13 continuing to mark and locate hydrants, valves and meters. The city recovered a few of their water system maps, which helped the

edge of town and to the KDOT/hotel area on the east side of town. We worked on locating and isolating the areas to provide water to each of the requested areas. It was finally agreed that the pressure/supply tank would be an asset. Clyde Zelch pulled the unit in overnight from southern Missouri and was ready to set up on Tuesday.

The VFD was in operation on late Wednesday. We began disinfecting the water system to two of the four areas assigned – the courthouse and KDOT/hotel. By Thursday evening we had completed the disinfection and

flushing of the sections that were in operation; we collected samples from the two areas. The plan was to begin isolating the system to provide water to the two remaining areas – FEMA housing and the temporary hospital. The areas proposed were on opposite sides of the town. Our biggest challenge was getting water to the temporary hospital to be located on the west side. Cleanup had been slow in this area, so both the water and cleanup crews were now doubled up. After flushing the lines on Friday and adding highly chlorinated water to disinfect them, we would wait

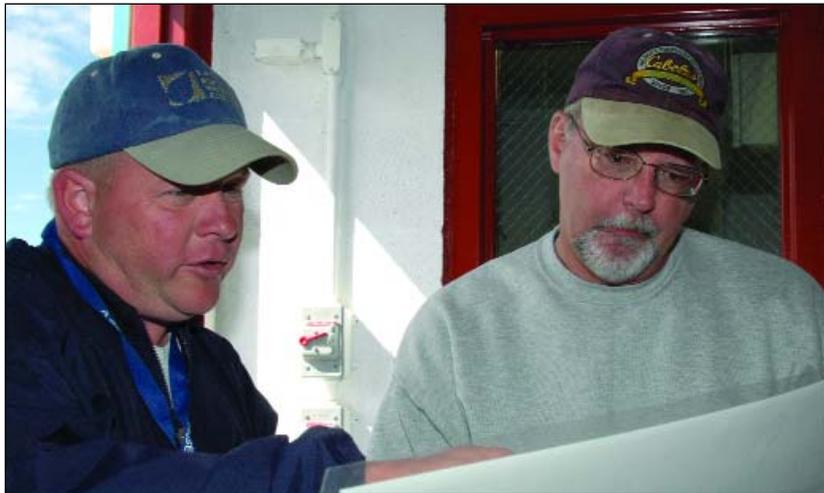


*Above:* KRWA Wastewater Tech Charlie Schwindmann uses an acoustic listening device to see if a valve is open or closed and then relays the information via walkie talkie to other team members further up the street.

*Above right:* KRWA Tech Jim Jackson and KDHE Bureau of Water Chief Dave Waldo discuss chlorine residual levels while reviewing a utility map of Greensburg.

*Right:* KRWA Techs Lonnie Boller and Doug Guenther take a chlorine reading from a hydrant south of Greensburg's downtown area.

effort of isolating the system to get the water service restored. During meetings with the Greensburg disaster management structure, Incident Command identified locations to where we were instructed to provide water service. These were the Court House area where county and city offices would be located in the center of town, the FEMA housing area at the south end of town, temporary hospital on the west



until the following Monday to flush and take bacteriological samples and deliver to Servi-Tech's lab in Dodge City.

### Week Three, May 21

The week of May 21 was spent getting water service restored to habitable homes on the east and west sides of town. We collected samples from all areas of town. With these efforts, combined with the resources provided by other member communities in KMEA to help with leak repairs, etc., the city of Greensburg had an active public water supply system by 4:00 p.m., Friday, May 25. The city has a new monitoring plan and will continue to make updates to the plan as the city is rebuilt. It took a

There is much work that remains to restore water service to businesses and residents as they rebuild. Fire hydrants and meters will need to be repaired or replaced. Well House No. 7 needs to be reconstructed and repairs need to be made to Well House No. 6.

total of ten days to get water to all areas of town once City Well No. 9 was operational on May 15. When the week was complete we had collected a total of 16 samples and all were "clean." We conducted more than 100 chlorine residual tests, and completed restoring water service to a loop around the city.

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In this article, I've used the pronoun "we" many times. That "we" refers to all who took part in working on the water system including KRWA staff who coordinated the efforts of crews from Dodge City, Garden City, Stafford, Wichita, Lacrosse, Russell, Larned and El Dorado. That "we" also includes personnel from KDHE who were on site and who offered advice and assistance. "We" got it done – and I think as efficiently as possible given the circumstances.

## A lesson from Greensburg . . .

What can any other water or wastewater utility learn from the disaster in Greensburg? In spite of the chilling experience of working in a community with residents who lost loved ones, neighbors, homes, and family possessions, the Greensburg disaster confirmed to me and other KRWA staff and I think KDHE staff that a need exists for a mutual help program in Kansas for water systems. No community can be prepared for a mile and a half wide tornado like the one that leveled Greensburg; however, I know that many communities and water districts are not prepared for even much smaller emergencies.

Yes, most systems have an emergency response plan. While having that plan may meet KDHE requirements, it needs to go further. A review of a system's physical aspects should be conducted by utility staff. As new members join the governing body, their orientation should include learning about the utility systems. The question is whether appropriate equipment is available and if things like double throw switches are in place. In effect, the review should clarify just how a community plans to provide water service and identify who's available to help when a system has a major service outage, whether caused by natural disaster or operational issues.

At the May 25 KRWA board meeting, the board of directors authorized the development of a staff position to develop and coordinate a mutual aid program for water systems and to also see that additional technical assistance in the way of emergency planning and response is provided to systems.

As this magazine goes to press, KRWA and others are providing assistance to flooded communities in southeast Kansas.

## Greensburg Relief Fund

The Kansas Rural Water Association has established a relief fund for Greensburg. Donations up to June 20, 2007 total nearly \$70,000.

KRWA is maintaining the fund open until September 1, 2007.

See the listing of donors as of June 20 on page 45.