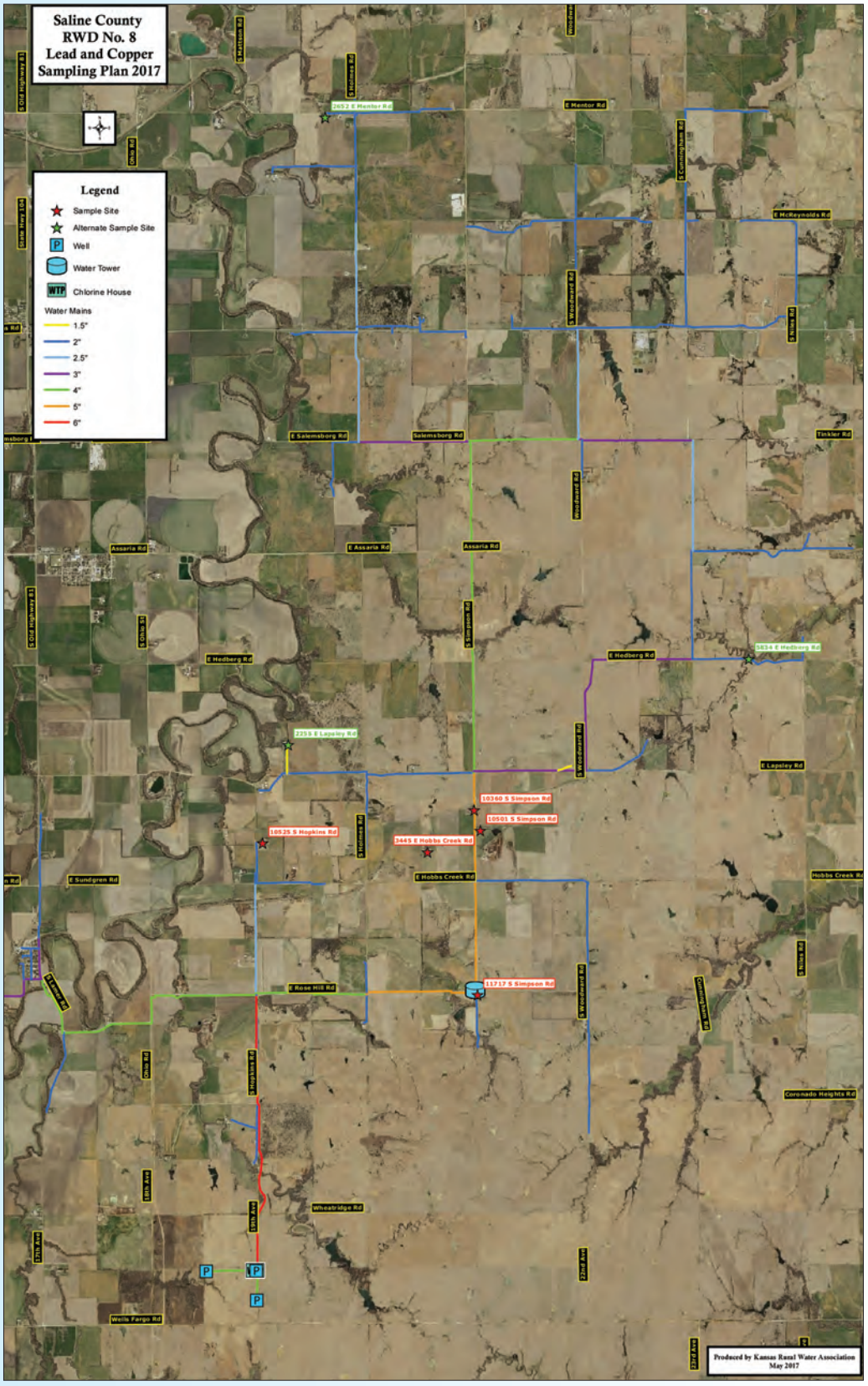
By Mark Thomas, GIS Mapping Coordinator

Putting "Lead and Copper Information" into Digital Format

As many readers are probably aware, lead and copper sampling policy in Kansas has come to a head this year, and has required a lot of time and effort on the part of water system personnel to comply with the policies enacted by the Kansas Department of Health and Environment (KDHE). Sending out surveys, and then a waiting period on the completion and return of the surveys to determine the lead and copper sampling locations, on top of other requirements, is a time consuming process. As pointless as it may seem, especially to those younger systems in the state, having this type of information about the different residences throughout the system will be valuable moving forward, as such policies are probably not going to regress. Getting that information into a digital format, known as "data" in the GIS world, will prove even more valuable moving forward.

Again, as many of you are probably aware, part of the lead and copper sampling policy requirement promulgated by KDHE is to provide



This graphic shows the "Lead and Copper Site Sampling Map" created for Saline RWD 8 by KRWA.

a map of the sampling locations throughout the system, with a maximum size of 11" by 17". In the various KRWA training sessions that I've participated in or attended that have covered these new policies, I've heard numerous complaints about how that small of map won't be very legible in revealing the sampling locations, or that the map will just look too busy. In discussing the requirements of these maps with KDHE personnel, as I've created close to 50 of these maps for systems, it is perfectly fine to show only the sampling locations on these maps. I also include the water mains, towers, wells, pump stations, and road names so the map reveals a good overall view of the system. The sampling locations are also labeled with the address. This ends up creating a very legible map of the sampling locations, even with the map being that small. If I were to leave the water meters, valves, hydrants, and all the system infrastructure on the map, then the map would be extremely cluttered. The other issue is that some systems cover hundreds of square miles and others are miles square. Still the maximum map size is to be an 11" x 17".

GIS makes mapping easier

Most of the systems I've created these maps for are cities and water districts that have had KRWA collect GPS data and perform a general GIS mapping project. If a system has such data, then producing a map like this is relatively easy, but takes some time to accomplish. The water system operator or bookkeeper just makes the request and lets me know which service accounts (meter numbers) are the sample locations. I export those locations. With the few systems that I've worked with on this who do not have any data, the process isn't nearly as simple, and takes more than double the amount of time. They let me know the physical addresses of the sample locations, and I have to toggle in between yahoo maps, as they show addresses and parcels in most areas,

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and ArcMap, having to manually create points, or sample locations, on these particular addresses. Just having GPS data of system infrastructure can save so much time and money when having to comply with new government regulations such as this.

As stated earlier, getting the lead and copper survey information into a digital format will make life easier in the future. If new sample sites are required, the information is readily available, making the process that much easier the next go around.

My advice on transferring locations into a digital format is to make a copy of the billing spreadsheet, and add more fields or columns for the lead and copper survey information to be entered. Once this is completed, that spreadsheet can be emailed to me so that I can link it to my water meter shapefile attribute table. The sky is the limit when it comes to how much data can be utilized and archived in a GIS. Another good example of how a GIS can make life easier is with record keeping of valve exercising, or hydrant flushing. Just keeping a spreadsheet with exercise dates or flush dates of the valves and hydrants can easily be linked to the GIS. The world of GIS revolves around questions of who, what, when, where, and why. Without any data, coming up with answers to questions such as this can be a time consuming process, but with data, everything you need to know is at your fingertips.

Mark Thomas has been a GIS Mapping Tech since September 2006. Mark has a bachelors degree in geography from Kansas State University and has specialized studies in ESRI's ArcView and ArcPad software.