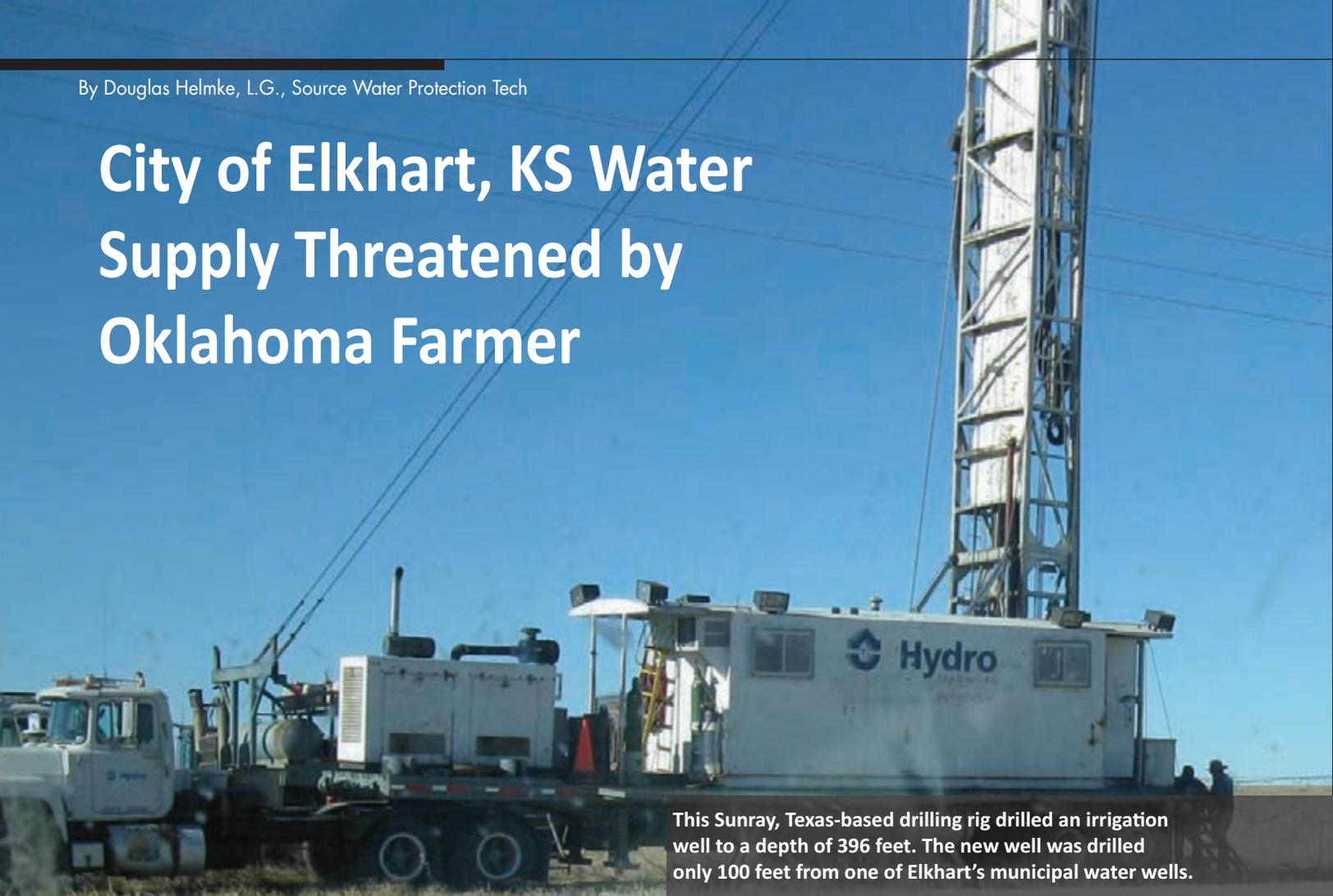


City of Elkhart, KS Water Supply Threatened by Oklahoma Farmer



This Sunray, Texas-based drilling rig drilled an irrigation well to a depth of 396 feet. The new well was drilled only 100 feet from one of Elkhart's municipal water wells.

On the morning of April 5, 2011, city of Elkhart Superintendent Matt Higgins got in his white pickup truck to make the daily inspection of the city's three primary wells. He turned west on Morton County's "A Boulevard", which is also identified as Road A by Texas County, Oklahoma. Obviously, this road with two names has the Oklahoma - Kansas boundary somewhere within the limits of the right-of-way.

When two counties share responsibility for a road because it straddles the boundary line between them, tension can be created. The citizens of one county may feel like their government and taxes are providing a greater amount of maintenance than the neighboring county. The other county and their citizens may have the opinion that the other county is creating extra, unneeded work for them. When one county believes a bridge that they share

is in need of replacement and the other county disagrees or can't afford it, the road may become closed, if cooperation is not achieved.

Zoning ordinances can create some tension with citizens, too. A property owner in a county that restricts mobile homes, for example, may find neighboring properties with these kinds of structures on the opposite side of the shared boundary but not on his or her side of the line. Citizens living in a county with exotic animal ordinances may not feel that they receive much of a benefit from the ordinance if their property is near a neighboring county that chooses not to regulate lions, tigers, etc.

If you live near one of the four state boundaries, you may have the same concerns as the citizens of interior counties – and then some. State statutes and regulations only extend to the state border. Businesses have had to account for differing, and sometimes changing,

gasoline and tobacco tax rates when choosing which side of the border to place their retail stores. In the past, differing liquor laws have also caused some places to have business opportunities or not have opportunities. With water, Kansas has agreements, or compacts, with three of its four neighbors. These agreements generally address "big picture" kinds of concerns, not local issues.

When Superintendent Higgins approached Elkhart Well No. 10, he was extremely surprised to find a water well drilling rig, flying a Texas flag, no less, with support vehicles and a drilling crew near one of the city's wells.

On March 31, 1965, representatives of Oklahoma and Kansas agreed to the Kansas - Oklahoma Arkansas River Compact, which was ratified by the Kansas Legislature on June 10, 1966. Article I of the Compact states that it

has four major purposes: to promote interstate comity, to divide and apportion equitably the waters of the Arkansas River Basin, to provide an agency for administration of the water apportionment, and to encourage the maintenance of an active pollution-abatement program.

Elkhart, Kansas is one of the youngest towns in the state. It was founded in 1913 when the Dodge City and Cimarron Valley Railway arrived. This railroad was controlled by the Atchison, Topeka & Santa Fe Railroad, and was built to the state line to retain control over land granted to the railroad by the government. Elkhart, Kansas was the end of the line, on the state line. From there, it took more than ten years for the Elkhart and Santa Fe Railroad to extend the railroad another fifty miles to Boise City and Felt, Oklahoma, as a possible short-cut to the southwestern United States. In all likelihood, the railroad companies didn't concern themselves too much over the availability of water. As long as they could pump water for their locomotives, everything else would be taken care of. So it was that the public water supply system had at least two private owners until the City of Elkhart purchased it in 1961. It was also in 1961 that Elkhart became the seat of Morton County.

The city's oldest water right continues to authorize a well close to town, which is regarded by the city as a stand-by well. It is the only one of six of seven that remains from the private utility era. It was soon after the city purchased the water system that serious consideration was made to ensure that the future demands of Elkhart would be met, not the quarterly and annual profits generated by the sale of water. Three wells, all more than 300 feet deep, were drilled in an area where the saturated thickness of the aquifer was more than 100 feet. And in this new wellfield, the wells were able to produce 1,100 gallons per minute or more.

The climate of Morton County is described as semi-arid steppe.

This Oklahoma Water Resources Board Well Completion Report provides information regarding the new irrigation well drilled near the city of Elkhart's Well No. 10, such as depth, amount of gravel pack, etc. The form asks for an estimated rate of diversion, but that information was not provided.

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According to the Weather Data Library at K-State Research and Extension, the 30-year normal precipitation for Morton County for 1961 to 1990 was 16.79 inches, and the 30-year normal precipitation for Morton County for 1971 to 2000 was 17.89 inches. While the replacement of the 1960's data with the 1990's data makes the climate look wetter, the 2007 through 2010 annual precipitation average for the county has been running at a deficit of at least 2.98 inches to as much as 6.57 inches. More recently, on April 26, 2011, all of Morton County was described by the United States Drought Monitor as experiencing an Extreme Drought. On May 3, 2011, the southwest quarter of the county, which includes Elkhart, was described as experiencing

Exceptional Drought conditions, the worst of the six established categories. It appears that dry conditions will exist for a fifth year, and this year may be the driest measured in a very long time.

Matt Higgins parked his truck near the city well and took a look at the activity. He asked the crew what they were doing and was told that they were drilling an irrigation well. This was somewhat confusing to him as the land in Oklahoma was already irrigated with wells and center pivot systems. The company said they were in compliance with Oklahoma regulations for well spacing and were going to complete the well as directed by the landowner. He telephoned his city administrator, took a few photographs and came back to town to figure out what he could do about the obvious threat to Elkhart's water supply.

The Ogallala Aquifer is a very important resource in Southwest Kansas. Without groundwater, the state's agricultural economy would not be what it is today. Without irrigation, there would be much less grain, and without irrigated corn, no feedlots.

Without feedlots, there would likely be none of the meat packing plants in or near Garden City, Liberal or Dodge City. With the continuing (worsening?) drought conditions, irrigators will need every gallon of water they can pump from the ground. They cannot afford to be a little bit short of the crop demands, at the critical times. Their crops will likely not be able to afford an interruption of pumping due to a loss of fuel or electrical power, or mechanical failure of a well, a pump or a pivot. Maybe the new irrigation well was drilled to provide redundancy in the irrigation project. Maybe a bit of drought-induced apprehension in the agricultural community is settling in.

The Kansas Department of Agriculture's Division of Water Resources (DWR), in conjunction with the Southwest Kansas Groundwater Management District No. 3, has a permitting system which controls the drilling of non-domestic water wells and the diversion of water for non-domestic purposes. In this part of Kansas, no new non-domestic permits to develop water rights are being issued. Restrictions on the distance a

replacement well can be drilled are also in place, as are restrictions on how close non-domestic wells can be from each other. Kansas regulations require 1,320 feet of spacing between non-domestic wells.

DWR was called by the city, and the staff there expressed their concerns, but informed the city that DWR had no control over wells drilled across the state line. The company that drilled the city's wells was to be asked for their professional opinion on whether an irrigation well that close to the city well would cause interference or impairment. What the

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city learned was that the company that drilled their wells was now part of the company that was drilling the new irrigation well! A call was placed to the city attorney, as legal options needed to be considered, and a call to Kansas Rural Water Association was made for additional advice. The city has also asked Ground Water Associates, Inc. for advice. The advice was to make static and pumping water level measurements as soon as possible and on a regular basis until a resolution to the situation was reached.

The Kansas – Oklahoma Arkansas River Compact has obviously been successful with two of the stated four purposes. Both states and the federal government have created the Kansas - Oklahoma Arkansas River Commission, which last met in July of 2010 near Arkansas City, Kansas. Secondly, decisions have been made to allocate the storage of surface waters of the Arkansas River Basin in Kansas and Oklahoma in specific tributaries to the Arkansas River. The third item that likely has been achieved, but could be debated by some, is the purpose to abate pollution of the waters in the basin. D. Brian Hufford, the author of *The Eyes Have It! Wichita Water Department: A History 1882-1982* explains in his book that while the city of Wichita was aggressive in their search for sources of water in the 1950's and '60's, it took some prodding by higher levels of government to address their wastewater issues. The Kansas State Board of Health adopted new water quality standards for surface water, which became effective on January 1, 1968. It appears likely that the adoption of these standards was at least bolstered by the Arkansas River Compact.

A few days after the irrigation well was drilled and made ready for pump installation, the distance between Elkhart Well No. 10 and the new irrigation well was measured by city staff. These two wells, each likely able to produce more than 1,000 gallons

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per minute when operating without interference from each other, are only 94 feet apart, center-to-center.

The last purpose, to promote comity, has also likely been achieved and continues. Last year's meeting was the 46th and there will likely be more. One definition of "comity", as defined by *Merriam-Webster*, is the informal and voluntary recognition by courts of one jurisdiction of the laws and judicial decisions of another. While meeting once a year with neighbors in a "friendly social atmosphere", another *Merriam - Webster* definition for comity, could it be possible for the two states to agree in principle to apply spacing requirements to all water wells, not just those in their respective states?

The city of Elkhart is concerned about this new irrigation well because it will likely increase pumping costs. More electricity will be required because the water will have to be lifted from a greater depth. It is possible that the water table could be lowered below the pump impeller, causing air to be pumped which can significantly damage pumping and water transmission equipment. It is possible that less water will be available from the city well too, in both quantity and rate, creating more reliance on the other wells. Finally, the irrigation well less than one hundred feet away can be a source of contamination. The log for this well shows that it was constructed with a



Two weeks after it was drilled, the irrigation well waits for a pump and electrical power to be installed and to be connected to an irrigation system.

gravel pack from the bottom of the hole, 396 feet deep, to within twenty feet of the surface. Is chemigation, the injection of herbicides and pesticides into the water before application on the field, going to be practiced? Will the installation of the chemigation and check valve equipment meet the highest industry standards and Oklahoma state law? That remains to be seen.

There are lessons to be learned by this incident by other water systems if their system has water wells near a state boundary. They should take the time to understand the risks they face if the Division of Water Resources is powerless to prevent encroachment on Kansas' water rights by out-of-state diversions. While Kansas Department of Health and Environment regulations require a water system to show proof

of "control" of the area within one hundred feet of a new public water supply well, does that afford enough protection? My answer is "No." I am hopeful that better comity can be achieved between Kansas and Oklahoma at the 47th annual meeting in 2011, and this situation will not happen again. In the meantime, these other Kansas water systems should work toward securing agreements to protect water quantity and quality with their neighbors, including those neighbors in Kansas.

The city of Elkhart has been hit by the first shot in this border skirmish. Since they can't stop the irrigation well from being drilled, they have decided to gather more information before determining their next step. While waiting and watching, they are proceeding with their previously-made plans for a new chlorination building, replacement of valves and new fire hydrants.

**Want to know more about this project and related topics?
Check out these links:**

City of Elkhart: <http://www.ci.elkhart.ks.us/>

Kansas - Oklahoma Arkansas River Compact:
http://www.ksda.gov/interstate_water_issues/content/356

K-State Research & Extension Weather Data Library:
<http://www.ksre.ksu.edu/wdl/>

Wichita Water Department History:
<http://www.wichita.gov/CityOffices/WaterAndSewer/WWDHistoryBook/>

Oklahoma Water Resources Board: <http://www.owrb.ok.gov/>

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