

# On-Site Assistance Contract Provides Invaluable Help to Public Water Systems in Kansas



The Kansas Water Plan has provided funding for on-site assistance to public water supplier across Kansas since 1992. A contractual agreement between Kansas Rural Water Association (KRWA) and the Kansas Water Office (KWO) has provided this assistance. The Kansas Department of Health and Environment provided supplemental funding to the contract in two of those years. The present contract is funded as a benefit of the Clean Drinking Water Fee.

The contract is to provide on-site technical assistance to public water system personnel on the operation, maintenance, finance, management, regulatory requirements, water quality, public health concerns or other critical issues. The pretty much addresses about any issue a public water supply may encounter day to day.

The contract also requires assistance with systems experiencing high unaccounted for water loss (UFW),

conducting water loss surveys, development of water conservation plans, and regional public water supply activities as identified by the Kansas Water Office or public water suppliers.

The assistance also involves issues from water treatment to water loss surveys, to reviewing water rates, meter testing, chlorinator repair and many policy issues. KRWA completes an annual report for the contract; that report is provided to the Kansas Water Office and Water Authority members. In the past, it has been provided to the basin advisory committees which recently transitioned to regional planning areas. The report is also on the KRWA Web site at <http://krwa.net/specialfocus>. The report is interactive, meaning, it can be sorted by planning area or system.

In state fiscal year 2015 (July 1, 2014 through June 30, 2015), assistance was provided to 212 cities and 149 rural water districts, public wholesale districts and other public

water systems. Total hours of technical assistance was 3,900 with 2,727 hours of onsite assistance and 1,173 hours of travel, phone assistance and other support.

KRWA personnel conducted 136 water loss surveys, locating more than 261 million gallons of unaccounted for water. The cost of production or purchase of that water on an annual basis would be \$649,189. Emergency leaks are reduced by a minimum of fifty percent for purposes of reporting.

KRWA also worked with 26 water suppliers in developing or revising their Water Conservation Plan and continued work with six "Special Focus" projects that were identified as having greater than 30 percent or more unaccounted for water.

When conducting water loss surveys it must be noted that leaks are not the only cause of high unaccounted for water. At the beginning of a water loss survey, there is typically a review of the recordkeeping, metering and meter reading and then last, checking for leaks if necessary. In most

The advertisement for Olathe Winwater Company features a blue and white color scheme. At the top, the company name "OLATHE Winwater COMPANY" is prominently displayed. Below this, the address "1165 W. 149 St. • Olathe, KS 66061" and contact information "Phone: (913) 829-3300 • Fax: (913) 829-3993" are provided, along with the website "www.olathewinwater.com". The main body of the ad is a list of products and services, organized into two columns. The left column lists items such as ADS—HDPE Storm Sewer, Ametek—Valve &amp; Curb Boxes, Apco—Air Release &amp; Specialty Valves, Ay McDonald—Brass Water Service Products, Cascade—SS Tapping Sleeves &amp; Clamps, Cherne—Muni &amp; Test Balls, Clay &amp; Bailey—Valve Boxes, Meter Well Covers, Clow Valve—Valves &amp; Fire Hydrants, Clow Water—Ductile Iron Pipe &amp; Fittings, Cla—Val—Specialty Valves, Contech—Corrugated Metal Culvert, Cresline—PVC Pipe, Crispin Valve—Air Release &amp; Specialty Valves, Deeter Foundry—Castings, DFWNDS—Couplings &amp; Drainage Products, Diamond Plastics—PVC Pipe, Dura Plastics—PVC Fittings, EBAA Iron—Megalugs &amp; Restraints, Fast Fab—Fabricated D.I. Flange Pipe, Fernco—Repair Couplings, Fisher—Locating Equipment, and GCI—Valve Boxes &amp; Meter Well Covers. The right column lists items such as Harsey—Water Meters &amp; Meter Systems, Hydrant Repair Parts—Fire Hydrant Extensions &amp; Parts, Infiltrator Systems—Septic Chamber Systems, JCM—SS Tapping Sleeves, Repair Clamp &amp; Bolted Couplings, J-M Eagle—PVC Pipe, Kennedy Valve—Valves &amp; Fire Hydrants, M&amp;H Valve—Valve &amp; Fire Hydrants, Mid-America Fittg—Brass Threaded Fitting &amp; Valves, Midwest Meter—Plastic Meter Wells, Multi-Fittings—PVC Sewer Fittings, Neenah Foundry—Castings, North American Pipe—PVC Pipe, Northern Pipe—PVC Pipe, Pipelife/Jet Stream Plastics—PVC Pipe, Power Seal—Waterworks Materials, Romac Industries—SS Repair Clamps &amp; Grip Rings, SIGMA—Castings, DI Fittings &amp; Valve Boxes, Silverline—PVC Pipe, Star—DI Fittings &amp; Valve Boxes, Tyler/Union Pipe—DI Fittings &amp; Valve Boxes, Val Matic—Specialty Valves, and Watts—Backflow Preventors &amp; PRV's. Below the product list, the text "RENTAL &amp; SERVICE" is followed by "Live Main Taps (4" - 24") • Tap Machine Rental (3/4" - 2") • Hydro Test Equipment". At the bottom of the ad, there are two small images: a fire hydrant on the left and a technical diagram of a pipe fitting on the right. The text "WHOLESALEERS OF PIPE VALVES • FITTINGS WATERWORKS • SANITARY SEWER STORM SEWER" is centered below the images, with the slogan "Best Service In Town" at the very bottom.

### History of Water Loss Surveys conducted, July 1, 1991 - June 30, 2015

	FY 92	FY 93	FY 94	FY 95
Number of Surveys	64	55	38	26
GPM detected	530.25	285.25	457.5	137.5
GPY detected	278,699,400	149,927,400	240,462,000	72,270,000
\$ Cost Savings	\$280,981	\$270,011	\$340,610	\$92,176
	FY96	FY 97	FY 98	FY 99
Number of Surveys	23	29	25	54
GPM detected	268.25	238	151.75	632.75
GPY detected	140,992,200	125,092,800	79,759,800	332,573,400
\$ Cost Savings	\$180,985	\$192,555	\$150,771	\$572,037
	FY 00	FY 01	FY 02	FY03
Number of Surveys	50	49	49	38
GPM detected	393.25	448.75	454	275
GPY detected	206,692,200	235,863,000	238,622,400	144,540,000
\$ Cost Savings	\$339,137	\$607,989	\$423,858	\$225,522
	FY 04	FY 05	FY 06	FY 07
Number of Surveys	40	44	40	53
GPM detected	246	256.5	261	463
GPY detected	129,297,600	134,816,400	137,181,600	243,352,800
\$ Cost Savings	\$421,953	\$278,814	\$253,846	\$650,564
	FY08	FY09	FY10	FY11
Number of Surveys	65	87	136	129
GPM detected	674	1009.5	1121.5	654.25
GPY detected	354,254,400	530,593,200	589,460,400	343,873,800
\$ Cost Savings	\$888,549	\$1,497,122	\$1,405,972	\$863,177
	FY12	FY13	FY14	FY15
Number of Surveys	128	63	111	136
GPM detected	653	612	386.5	496.75
GPY detected	343,216,800	321,667,200	203,144,400	261,091,800
\$ Cost Savings	\$757,802	\$705,749	\$595,707	\$694,819
<b>KRWA has logged every location of every leak identified through water loss surveys since July 1, 1990 under a contract administered by and funded through the Kansas Water Office. The chart above shows the annual and total of that work through June 30, 2015.</b>	<b>Water Loss Surveys 1992 - 2015</b>			
	Number of Surveys	1,532		
	GPM detected	11,106		
	GPY detected	5,837,445,000		
	\$ Cost Savings	\$12,690,706		

cases, pipeline leakage is spotted by the individual water system. However, there are many leaks that are difficult to locate; that is where KRWA is called upon to help. Most small systems have only one employee in the field. Looking for leaks can quickly become overwhelming and then frustration sets in. KRWA has the equipment needed to help identify problem areas and pinpoint where the leaks are. The equipment includes sonic listening devices, ultra-sonic meters, data loggers and a leak correlator. Most important, KRWA staff have the first-hand experience in using this equipment efficiently to assist the systems. For example, when using the leak correlator it is imperative that the information programmed into the unit is accurate. The correlator is very accurate if the line size, length, type of pipe for each section is known and accurately programmed. However, if there is a line not known about also in the area being tested or the pipe is of a material other than submitted into the logger, the accuracy is going to be questionable. That is why KRWA uses sonic listening devices to verify the

location of the leak. Both the correlator and data loggers are very useful in municipal systems.

However, they are not the end-all, cure-all for rural water districts. PVC pipelines do not carry the sound of a leak very far. This is where reducing the area of a leak is more difficult. It is best to work late at night when usage is the lowest. This typically means after 10 p.m. and before 5 a.m. Starting at the water supply and closing main line valves to isolate leaks to a small area between two valves is necessary in most instances. Once a leak has been isolated between two valves the detection process becomes more involved. Walking the lines during the day may locate the leak. However, at times this does not work. The use of an ultra-sonic meter is helpful in this situation. It does require excavating the line and strapping the meter on the pipeline to measure the flow. If the meter is installed in the middle of the suspected leak, it's easy to determine if the leak is before or after the meter. It may take several excavations before actually locating the leak.

## Water Conservation Plan development

As noted earlier, KRWA assisted 26 water systems in developing or updating their water conservation plans in FY15. The process is that the utility first contacts the Kansas Water Office; their staff prepare a draft plan which

is sent to the system and KRWA. KRWA then contacts the system to offer assistance in making necessary revisions. Each system is unique which makes each plan unique. KRWA works with the systems to obtain the information needed to

tailor the plan to fit the respective water system. After the information is obtained KRWA enters the information in the plan and then formats the plan and sends it to the water system. Systems then verify the accuracy of the revisions. When satisfactory, the governing body needs to approve the plan. It is much easier to have the plan reviewed by KRWA

or the Kansas Water Office before being approved by the governing body. If changes are needed and the plan has already been approved then it will need to be reconsidered. After the governing body has approved the plan it is then sent to the Kansas Water Office where the plan will be

reviewed to make sure it reflects the system's needs. If there are no changes the Kansas Water Office then forwards the plan to the Kansas Department of Agriculture, Division of Water Resources requesting approval of the plan. Each water system is notified when the plan is approved.

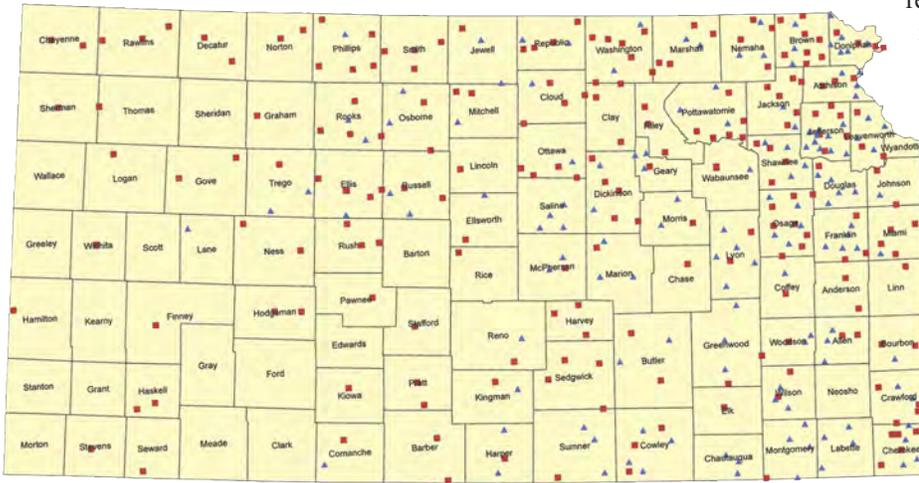
This article provides only a brief summary

of the assistance provided through one contract. KRWA also operates a contract funded through a contractual agreement between the Kansas Department of Health and Environment, PWS Capacity Development Program, State Revolving Fund Set-aside, as well as a KDHE-funded contract for technical assistance to wastewater systems and

five contracts administered by the National Rural Water Association. While the administration of contracts and reporting requirements can be a challenge, water systems that receive help appreciate and rely on the services that are available.

I also want to remind readers of the opportunity they have to meet with agencies during the KRWA Annual Conference and Exhibition, next March 29 - 31 at Century II Convention Center in Wichita. All the state and federal agencies that deal with water or wastewater utilities will be represented. I hope you'll look them up in EXPO Hall and also attend training sessions each will be participating in.

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**The contract, "On-site Assistance to Public Water Systems" funded through the Clean Drinking Water Fee allowed KRWA to help 212 cities and 149 RWDs and other systems in FY15.**

▲ Rural Water Districts, other systems      ■ Cities



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