

Maintenance of Master Meters on Wells Requires Compliance with State Regulations

As a technical assistant for Kansas Rural Water Association, I receive many calls concerning failure of meters that measure water from wells. Sometimes the operator who calls reports that the water levels in storage tanks are still good and there has been no loss of pressure. Everything seems fine, other than the meter measuring production has failed.

Most water meters on the Kansas Department of Agriculture, Division of Water Resources' approved water meter list are still mechanical multi-jet, turbine or positive displacement type meters. The magnetic flow (mag) meters are gaining in popularity and use by water systems. A magnetic flow meter is a volumetric flow unit which does not have any moving parts. Magnetic flow meters will generally not work with hydrocarbons, distilled water, and many non-aqueous solutions. I do not have much experience with mag meters but manufacturers suggest accuracy as

being close to 100 percent for all flow ranges. The mechanical meters still outnumber the mag type meter in Kansas.

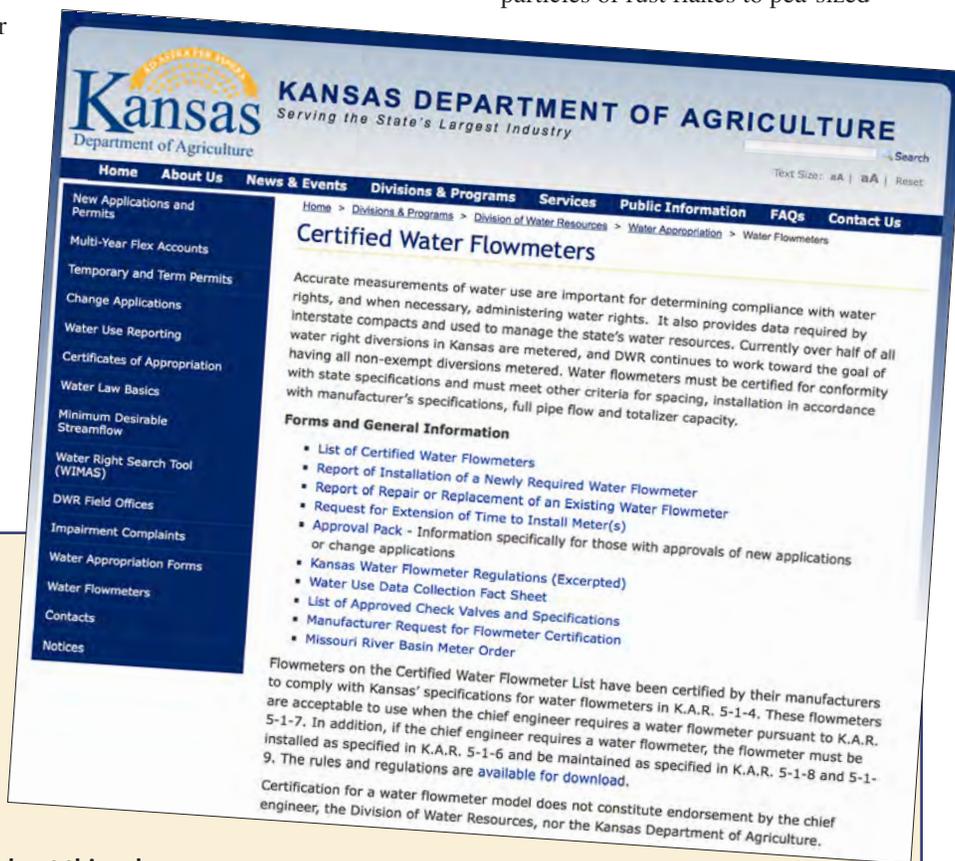
Water meters can just plain wear out in time depending on water quality and use. Large water meters need to be tested and serviced to ensure they are operating accurately for accountability. Knowing that the production meters are accurate is an important aspect of sound water system operation and management. Many operators and

others worry about water loss issues. One of the first steps should be to make sure that the master meters are recording accurately. I can assure readers, in many cases they are not.

In the past several months I have been called to troubleshoot several systems with meter failures. I found measuring chambers that had excessive wear; these were on positive displacement type meters. I've found turbine meters that were jammed with particles of rust flakes to pea-sized

Complying with regulations pertaining to flowmeters

For more information to ensure compliance with Kansas Department of Agriculture Division of Water Resources (DWR) regulations concerning flowmeters, check out the various links at this url: <http://agriculture.ks.gov/meters>





KRWA Technical Assistant Doug Guenther works on the repair of a 2-inch meter at the city of Bison. The meter was shattered on the inside, likely due to air being pumped.

I've found turbine meters that were jammed with particles of rust flakes to pea-sized gravel and other mineral deposits and shards of PVC that stopped meters completely.

gravel and other mineral deposits and shards of PVC that stopped meters completely. And I have encountered turbine and multi-jet meters with partially blocked screens on incoming side that created so much turbulence that the meters over-registered.

All the meters I have worked on recently have been brought back to service by repairing or removing the blockages and giving the meters a thorough cleaning.

Many operators are not that experienced with their systems and therefore are unaware of Kansas Department of Agriculture DWR's regulations pertaining to production

meters and what is required. They are unaware of there being a listing of meters that are approved for use in public water systems. They are also unaware that if a seal on a meter is broken to allow a repair or cleaning a failed meter that a meter repair form is required and needs to be completed and sent to the appropriate DWR field office within 30 days of the repair. A

form is required if a meter is replaced for some meters are not repairable.

I carry these forms on a thumb drive in the work truck for this purpose and can be down-loaded from Kansas Department of Agriculture and KRWA web sites.

It is a violation of DWR regulations if appropriate documents notifying the agency of meter changes or repairs when seals are broken. Infractions can result in fines against the water system by the Kansas Department of Agriculture.

Doug Guenther has worked as a Technical Assistant for KRWA for 16 years. Doug worked for the City of Oakley in the Water and Electric Department for eight years. He has also worked several years for an industry supplier. Doug is a Class II Certified Water Operator.



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