

## In This Issue

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*There has been a lot of talk in the water industry over the past few years about the lack of “performance indicators” when it comes to quantifying water accountability issues. In the United States we have excellent performance indicators, namely, water meters. The vast majority of all accounts in this country are metered, whereas in other parts of the world, many water systems remain partially or totally unmetered.*



*The best “Performance Indicator” in the water industry is an accurate water meter. When production as well as customer accounts are accurately metered there are only two parts to the water accountability equation required – How much water do you produce and how much water do you sell? If you want “real performance indicators”, accurately meter the water in your network.*

*Revenue, water system operations, and especially water conservation programs are directly impacted by the accuracy of metering.*

*As reported in our previous newsletter, we have had the opportunity to review consumption data on several million water meters. We have observed the staggering impact on water accountability, operation costs and lost revenue due to miss-application and sizing of water meters.*

## Water Meter Sizing Issues

There are a number of size related issues to consider when applying and installing 1-inch and larger meters.

- The majority of service lines and meters are sized by the utility staff from previous experience and engineering data. Cost of service to the individual customer is equitably distributed in the rate structure.
- Often, new applicants insist on a service line and meter that are larger than necessary, to ensure abundant pressure and flow after the tap is installed. This condition usually leads to non revenue water associated with the over-sized meters.
- On the positive side, many utilities have a meter demand charge and the customer pays a higher minimum charge for the larger meter. In some cases the increased minimum bill charge offsets the revenue loss associated with over-sizing, but may not offset the increased capital cost to purchase, install and maintain the larger size meter. Of course, any consequent meter under registration contributes to non revenue water.

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# Water Round Up

May 2008

Specialists in Recovery of Unaccounted-For Water and Lost Revenue

## The Problem:

Millions of Dollars in Unrealized Revenue

Millions of Gallons of Non Revenue Water each Year

Millions of Dollars Spent On Treating a Symptom Rather than Solving the Problem!

Not all Meter Replacement Programs are Cost Effective!

Not All Leak Detection Programs Are Successful!

- Over-sizing usually results in under registration of water use at low rates of flow.
- Conversely, undersized meters and services may cause customer complaints, excessive wear on the meter and high maintenance costs.

### If not resolved, the consequences of these issues include:

1. Increased costs associated with meter replacement and maintenance.
2. Lost revenue - Revenue loss associated with meter error (Apparent Losses) may be five to thirty times the direct value of losses associated with leakage (Real Losses).

## Over Sizing Water Meters

The following table provides a summary of data from several recent JBS projects (1-inch and larger meters only). The data indicates that there is a serious problem with over-sizing of meters in many US water systems. The table does not include data from utilities outside of the United States. **The capital cost increase associated with meter replacement of over-sized meters is well into the \$millions.** The meter selection process must include meter cost, the utility's maintenance capability, meter life expectancy (which will depend on water quality conditions) and rates of usage. Another key factor in this selection process is the water rate structure itself. Not all meter replacements will be cost effective due to the rates. Proper meter selection and sizing is critical in the efficient operation of a water utility.

### One Inch and Larger Meters – Sizing Summary

Meter Size	No. Accts	No. Accts Oversized	% Oversized
1	60,867	47,301	77.7%
1.5	20,538	13,682	66.6%
2	18,819	11,008	58.5%
3	2,278	1,526	67.0%
4	1,346	970	72.1%
6	1,020	497	48.7%
8	270	113	41.9%
10	65	39	60.0%
<b>Totals</b>	<b>105,203</b>	<b>75,136</b>	<b>71.4%</b>



Is a Meter Sizing Problem Resulting in Unrealized Revenue?



Are Old, Outdated or Miss-Applied Meters The Cause of Your Revenue or Water Loss?

**JBS Offers Cost Effective, Long Term Solutions!**



## Datalogging of Water Meters

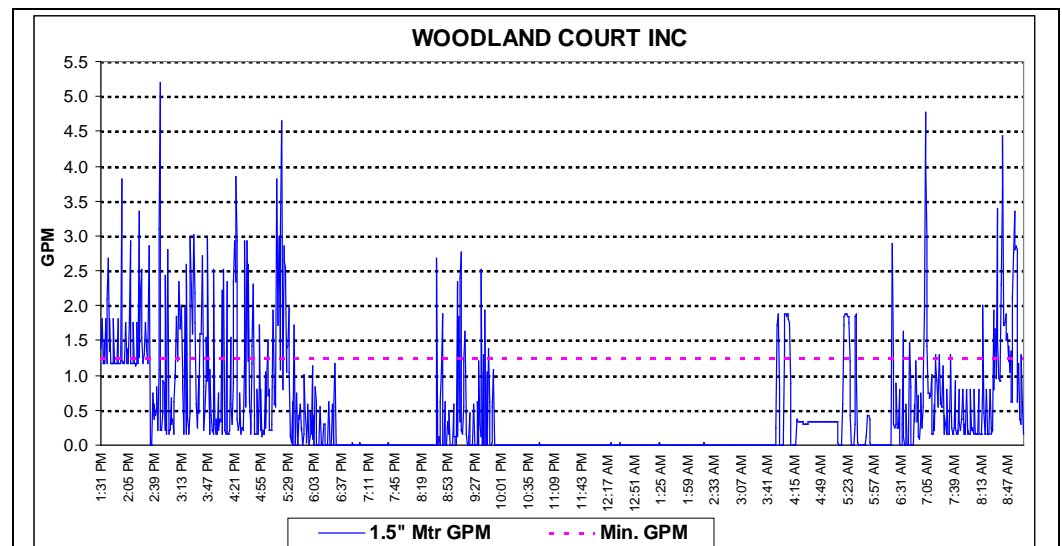
A water meter data logger (or data recorder) is an electronic device that digitally records flow rates over time.

At JBS we rely on meter datalogging as an effective tool for in-field verification of our meter sizing computer models.

The accurate sizing and application of water meters has repeatedly proven to be effective in recovering revenue and improving the metered ratio and thereby reducing "Non Revenue Water".



The following examples show some actual case studies.

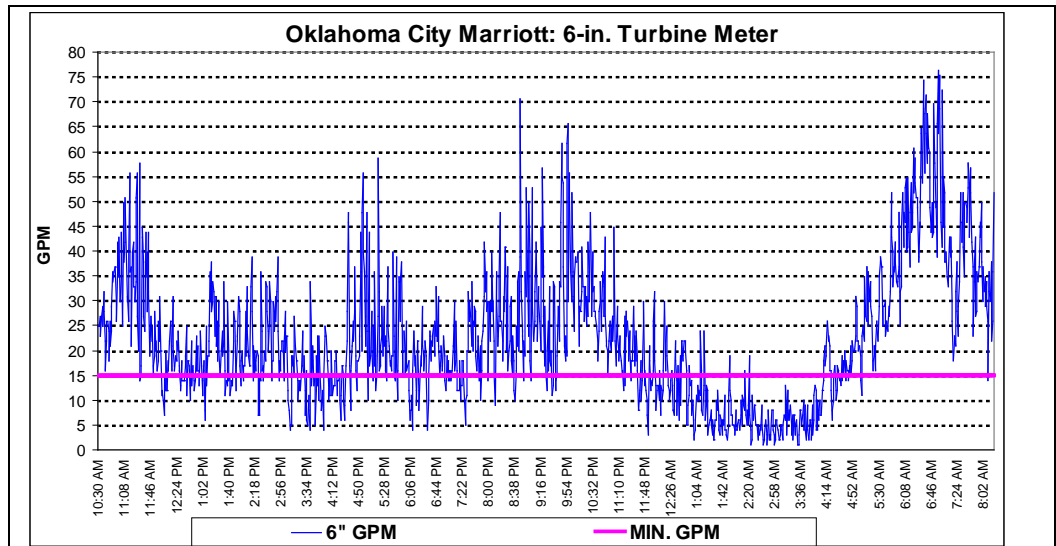


Usage at this office building shows frequent daytime use on this 1.5-inch meter, varies well below the low flow accuracy of this meter to about 5 gpm. Nighttime use drops to 0 gpm. For this low use customer, about 45% of logged usage is below the meter's specified minimum (1.25 gpm), resulting in year round under registration.



JBS Does Not Sell Products, or Participate in Revenue Sharing Programs.

We have nothing to gain from our recommendations, but their successful implementation by our clients.



Daily usage at this hotel is moderate. Flow rates are at the low end of the operating range of the 6-inch meter installed here. Most use occurs between 15-36 gpm with occasional use up to 76 gpm. About 13% of usage is at rates below the low flow minimum for this meter, resulting in significant daily volumes of under registered use.

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## Photos from the 2008 MS 150 Bike Ride



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*Every April our cycling group participates in the two day, 170 mile, MS 150 bike ride from Houston to Austin with about 13,000 other riders. One of the largest MS 150 fundraising events anywhere. A wonderful event and for a good cause. MS affects more than 400,000 people in the U.S. and 2.5 million worldwide. This year so far, over \$11,500,000 have been raised.*