

## In This Issue

- Large Meter Selection

### The Problem:

Lost Revenue

Millions of Gallons of Non Revenue Water

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!

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

## JBS Completes Meter Management and Water Loss Projects

- Garland, Texas (Meter Management Audit of 68,000 accounts)
- Cleveland, Texas (Water Audit 2,500 accounts)
- CH Caribe, San Juan, Puerto Rico (Meter Management Analysis of 400,000 accts)
- León, Mexico (Completed first Phase of Water Audit 315,000 accounts)
- McAllen, Texas (Water Production and NRW Analysis (40,000 accounts)

## New Projects

- Del Rio, Texas (Tetra Tech) - Water Loss Audit (15,000 Accounts)
- Brushy Creek MUD - Water Audit (5,000 Accounts)
- Galveston County WCID #1 - Rate Review (7,300 Accounts)
- León, Mexico - Phase II of Water Audit (315,000 Accounts)

As we reported in 2008, the León, Mexico Municipal Water and Sewer Agency has implemented programs to increase water distribution and pressure to all sectors. Prior to our involvement on this project, sustainable solutions to reduce Non Revenue Water (NRW) had not been satisfactory.



In Phase 1 of the 2008-2009 project, JBS has been assisting the agency in solving the NRW problem. The consumption and metering analysis of over 315,000 accounts confirmed that meter issues represented a significant portion of the NRW problem. In Phase II, we will be supporting the agency as it implements the many Phase I recommendations.



**Is a Meter Sizing Problem contributing to lost Revenue?**

**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.**

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*In addition, we are conducting a production meter review in a system with one water plant and over 130 wells producing 61.5 MGD. We expect to complete the audit by mid-summer 2009.*



*We will also be reviewing the León system's leak repair history, looking for trends for the development of line replacement programs that will provide the greatest return on investment.*

## Large Meter Selection

*Proper meter selection is a complex issue where utilities must balance water accountability concerns with the bottom line financial aspect. As we enter into a period of possible fiscal shortfalls, meter sizing and proper selection need to be balanced against capital cost, revenue and water accountability. Meter costs, water rates and customer usage are significant components of the large meter selection process.*

*Certain realities must be considered:*

- (1) Meter solutions are not universal*
- (2) Not all meter replacements will be cost effective.*
- (3) Not all meter replacements will have an impact on water conservation.*

Utilities should consider implementing an **in-depth water audit** and not just a "paper" audit.

In this time of fiscal concerns, the cost benefits and revenue enhancements derived by conducting a full system audit are more crucial than ever.

Contact the experienced professionals at:

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## Large Meter Selection: Compounds or Turbines?



Many utilities develop a "tunnel vision" approach to meter selection and application. They decide to avoid the expense associated with compound meters and exclusively use turbine meters. Other utilities do just the opposite. They believe it is important to accurately measure the full range of flows in spite of cost. In reality both types of meters have there application.

However, there are many installations where a third type of meter should be considered. A downsized Positive Displacement or Multi-Jet meter might also suffice.

Let's look at a few of the issues that will affect a utility's meter selection. Compound meters are expensive and are high maintenance meters. These meters have mutiple measuring chambers and a differential pressure isolation

valve, any of which can malfunction. When maintained properly, compound meters will record the full range of usage for most customer situations.

CHARACTERISTIC	COMPOUND METER	TURBINE METER
FLOW RANGE	1000 TO 1	60, 80 OR 100 TO 1
LOW FLOW SENSITIVITY	BETTER	GOOD
LONG TERM PERFORMANCE	GOOD	BETTER
HEAD LOSS	HIGHER	LOWER
MAINTENANCE COST (PARTS & LABOR)	HIGHER	LOWER
METER TEST FREQUENCY	SAME	SAME

Turbine meters are less expensive and require less maintenance, but are less accurate at lower flow rates. Used in the proper application and properly sized, they will provide accurate service and an excellent useful life.

A utility has to decide "what is practical and cost effective". Therefore, several questions must be answered.

- What is the cost of the meter?
- How much money can the utility earn from the meter in one year (commodity revenue)? Or two years? Or more?
- Does the utility have the capability of testing and repairing large meters in-house or do they contract for these services?



# Water Round Up

March 2009

Specialists in Recovery of Non Revenue Water and Lost Revenue

Metering large users is not an “install and forget” option. These meters must be maintained and frequently tested. Therefore, there are additional operating cost considerations.

The following table shows that if a 3-inch compound meter were used in lieu of a 3-inch turbine, the capital cost difference between the meters is \$1,200. The capital cost difference must be made up with additional meter sales.

### Cost Comparison of Compound Meter versus Turbine Meter

Meter Size	Cost Compnd \$	Cost Turbine \$	Cost Diff \$	Kgal/Yr Incr. Require 1 Yr Pay-Bk	Kgal/Mo Incr. Require 1 Yr Pay-Bk	Kgal/Mo. Incr. Require 2 Yr Pay-Bk	Kgal/ Mo. Incr. Require 3 Yr Pay-Bk
2"	\$1,200	\$450	\$750	187.5	15.6	7.8	5.2
3"	\$1,800	\$600	\$1,200	300.0	25.0	12.5	8.3
4"	\$2,300	\$900	\$1,400	350.0	29.2	14.6	9.7

Based on a commodity charge of \$4 per 1000 gallons for water and sewer, the utility would have to increase consumption by 300,000 gallons per year (25,000 gallons per month) to pay back the additional cost of the compound meter. A two year payback would require an increase of 12,500 gallons per month increase in metered sales.

In many cases this increase in usage may not occur and the extra capital cost spent on the compound meter may not be recovered. This is especially true when the extra maintenance cost associated with compound meters is factored in. In this example, the cost analysis does not reflect the minimum bill charge, since the meter size remains the same.

Many high use accounts never experience the low flows that would justify the extra cost of a compound meter. A properly sized turbine meter would capture the flows accurately. The above example illustrates that meter selection is critical and “Not All Meter Replacements Are Cost Effective”.

JBS offers a no-fee cost analysis based on the parameters of a utility’s water system. This data review establishes the cost benefits of conducting a full water audit including a detailed meter management analysis. Contact us for further information.

We look forward to sharing our insight and experience with you through these newsletters. We would appreciate your feedback on any topic via e-mail to [jbsmith@jbswater.com](mailto:jbsmith@jbswater.com).

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