

Water Audits

What can you learn from them.



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"Water accountability is vital to our supply of future water in Texas and the nation. We must begin to strive for excellence in water loss management to ensure that our precious resource reaches its end user in its entirety."

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What is a water audit?

A water audit is boring, time consuming and will put even the most detailed person to sleep. On a more positive note, it does show where water is lost, where and how much the volume of lost water is costing the utility.

Records and system control equipment such as meters are checked for accuracy to ensure a valid result.

The goal is to help the utility select and implement programs to reduce and sustain water losses and manage the utility as an efficient business

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Once started it never stops.

- **Top down water audit**
 - Preliminary
 - Not the end product
 - Using basic data
 - Production
 - Sales
 - Flushing

Second Type of Audit

- **Component Analysis**
 - Validation scoring
 - Authorized consumption
 - Apparent loss
 - Real loss

Validation of data

- **First audit is considered preliminary**
- **Grading system assists in validation**
- **Confirm preliminary water audit data**
- **Assessment determines areas of focus**

Apparent loss/Meters

- Review reports for accuracy
- Meter application
- Implement testing programs
- Treatment facility meters

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Apparent Loss/Meter Accuracy

- Meter types
 - Turbine
 - Compound
 - PD and Multi Jet
- Age/volume
- Meter application
 - Schools
 - Commercial applications
 - Residential

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AMR – Automatic Meter Readers

- Fixed Network
 - Instant gratification
 - Way to much data
 - Do you really need this
 - Cost/benefit ratio

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AMR – Automatic Meter Readers

- Drive-by Technology
 - Interrogate the meters
 - Less expensive than fixed
 - Saves time
 - Payback period

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Can Real loss be Diminished

- Leak detection programs
- High pressure zones?
- Proactive vs Reactive
- Repair times
- Own equipment/outsource
- TWDB

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Is the utility managing its losses?

- Are you in full control of the system?
 - Where are the losses occurring?
 - Actively looking for leaks?
 - How is lost revenue addressed?
 - Producing water without compensation?
 - Water loss prevention committee?

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How can the audit help the utility?

- The audits will show deficient areas within the utility.
- Shows the need to implement the use of benchmarks or performance indicators.
- Where in the system are we losing water?
- How can we prevent the losses?
- Can increase financial standing.

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Performance Indicators

- Real loss/mile of main/per day – rural
- Real loss/# of connections/per day – urban
- Total Apparent loss/retail cost
- Total Real loss/marginal production cost
- Infrastructure Leakage Index

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Recommendations

- Utilities should review audit worksheet and single out low assessment numbers.
- Then begin to address those items using a priority system.
- Design programs and timetables to address identified low validity categories.
- Ensure that goals and objectives are achievable.

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Water Loss Resources

- The Manual
- The online worksheet
- Water loss webpage
- "Free" consultation services
- Workshops
- "Free" equipment.

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Friendly, helpful Government???

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