



Water Loss Audits

- Required by California Senate Bill 555
 - Urban retail water suppliers must perform annual Water Audit per AWWA M36
 - Water audit must be validated by a 3rd party certified Water Audit Validator
 - Submit validated water audit to the DWR annually
 - October 1 for CY filers
 - January 1 for FY filers

Water Loss Audits

- Water Production
 - Own production sources
 - In-Lieu production sources
 - Production meter accuracy
- Water Demand
 - Customer metering and billing
 - Customer meter accuracy
 - Meter to billing process
 - Authorized, but unmetered use
 - Fire fighting, sewer cleaning, etc.
 - Theft
- Operations Data
 - Length of mains, system pressure, number of connections
- Cost Data
 - Operating expenses, Customer rates, Variable production cost

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Key Performance Indicators

KPI	What is It?	Mesa Water	Mesa Water® Rank in OC
Real Losses (Gal/conn/day) (%)	Leaks that we see and repair Leaks that we don't see	12.78 2.2%	66 th Percentile
Infrastructure Leakage Index (ILI)	Theoretical minimum is 1 Leakage normalized to <ul style="list-style-type: none"> • Miles of pipe • System pressure • Number of connections 	0.73	74 th Percentile
Data Validity Score	3rd Party Validated assessment of audit data inputs	79	96 th Percentile

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Water Loss Program Status Summary

- 2.2% "Real Losses" is excellent
- Improvements in FY 2020
 - Pressure survey to verify hydraulic model
 - Leak detection on 30 miles of pipeline
- Improvements in FY 2021
 - Route 600 large meter replacements and AMI/Cellular endpoints

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Questions and Discussion

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Using the Data Validity Score

AWWA Free Water Audit Software: Determining Water Loss Standing

Water Audit Report for: Mesa Water District (CA30100004)

Reporting Year: 2018 - 2017-42018

Data Validity Score: 78

Focus Area	Level I (0-25)	Level II (25-50)	Level III (51-70)	Level IV (71-90)	Level V (91-100)
Audit Data Collection	Leak auditing and loss control team, address production metering deficiencies	Analyze business process for customer metering and billing functions and other metering operations, identify data gaps	Establish water policies and procedures for data collection	Perform data collection process and establish as routine business process	Final water audit is a reliable source of data to year water efficiency standing
Short Term Loss Control	Research information on leak detection programs, leak flowcharting analysis of customer billing system	Conduct loss assessment investigations on a sample portion of the system, customer meter reading, non-authorized consumption, etc	Establish ongoing mechanisms for customer meter accuracy testing, audit leakage costs and infrastructure monitoring	Reduce, enhance or expand ongoing programs based upon economic justification	Stay ahead of improvements in metering, meter reading, billing, leakage management and infrastructure rehabilitation
Long Term Loss Control		Begin to assess long-term meter reading large expenditure, evaluate meter replacement, meter data management program, meter customer billing system, Automatic Meter Reading (AMR) system	Begin to assemble economic business case for long-term leakage loss reduction program, data handling available through the water audit process	Conduct detailed planning, budgeting and launch of comprehensive improvements to enhance, billing or infrastructure management	Complete incremental improvements in short-term and long-term loss control activities
Target Setting			Establish long-term approach and leakage reduction goals (>10 year horizon)	Establish mid-range (3 year horizon) approach and leakage reduction goals	Establish and write loss control goals on a year-to-year basis
Bench Marking			Preliminary Comparison - can begin to rely upon the Infrastructure Leakage Index (ILI) for performance comparison for real losses (see below table)	Performance benchmarking is performed in comparison to real loss standing	Identify Best Practice Benchmarks - Be fully aware relative to a real loss performance index for real loss control

For validity scores of 50 or below, the shaded blocks should not be focus areas until better data validity is achieved.

AWWA Free Water Audit Software v3.0

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FY2020 Water Balance

AWWA Free Water Audit Software: Water Balance

Water Audit Report for: Mesa Water District (CA30100004)

Reporting Year: 2020

Data Validity Score: 79

Own Sources (Adjusted for known errors)	Water Exported 0.000	Authorized Consumption 15,094,210	Billed Water Exported			Revenue Water 14,980,910
			Billed Authorized Consumption 14,880,810	Billed Metered Consumption (water exported is removed) 14,880,910	Billed Unmetered Consumption 0.000	
14,988,170	Water Supplied 15,835,390	Water Losses 741,190	Unbilled Authorized Consumption 103,300	Unbilled Metered Consumption 0.000	Unbilled Unmetered Consumption 103,300	Non-Revenue Water (NRW) 854,480
			Apparent Losses 383,003	Unauthorized Consumption 33,589	Customer Metering Inaccuracies 305,927	
Water Imported 847,220		Real Losses 358,178	Leakage on Transmission and/or Distribution Mains Not Broken down	Leakage and Overflows at Utility's Storage Tanks Not Broken down	Leakage on Service Connections Not Broken down	

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