

Please direct questions to Katie Schwaab at 303-384-8180

AWWA Free Water Audit Software:  
Reporting Worksheet

WAS v5.0  
American Water Works Association  
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? Click to access definition  
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Water Audit Report for: **City of Golden**  
Reporting Year: **2018** 1/2018 - 12/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: **ACRE-FEET PER YEAR**

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

----- Enter grading in column 'E' and 'J' ----->

**WATER SUPPLIED**

Volume from own sources: + ? 5 3,339.900 acre-ft/yr  
Water imported: + ? n/a 0.000 acre-ft/yr  
Water exported: + ? n/a 0.000 acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt: + ? 9 Value: -3.610 acre-ft/yr  
+ ? Value: acre-ft/yr  
+ ? Value: acre-ft/yr

Enter negative % or value for under-registration  
Enter positive % or value for over-registration

**WATER SUPPLIED:** 3,343.510 acre-ft/yr

**AUTHORIZED CONSUMPTION**

Billed metered: + ? 7 2,967.320 acre-ft/yr  
Billed unmetered: + ? 10 0.600 acre-ft/yr  
Unbilled metered: + ? 4 66.130 acre-ft/yr  
Unbilled unmetered: + ? 5 8.359 acre-ft/yr

**AUTHORIZED CONSUMPTION:** 3,042.409 acre-ft/yr

**WATER LOSSES (Water Supplied - Authorized Consumption)**

301.101 acre-ft/yr

**Apparent Losses**

Unauthorized consumption: + ? 8.359 acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies: + ? 3 46.195 acre-ft/yr  
Systematic data handling errors: + ? 7.418 acre-ft/yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

**Apparent Losses:** 61.972 acre-ft/yr

**Real Losses (Current Annual Real Losses or CARL)**

Real Losses = Water Losses - Apparent Losses: 239.129 acre-ft/yr

**WATER LOSSES:** 301.101 acre-ft/yr

**NON-REVENUE WATER**

**NON-REVENUE WATER:** 375.590 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

**SYSTEM DATA**

Length of mains: + ? 10 113.1 miles  
Number of active AND inactive service connections: + ? 10 5,465  
Service connection density: ? 48 conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: + ? (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: + ? 6 94.8 psi

**COST DATA**

Total annual cost of operating water system: + ? 10 \$5,684,408 \$/Year  
Customer retail unit cost (applied to Apparent Losses): + ? 10 \$7.88 \$/1000 gallons (US)  
Variable production cost (applied to Real Losses): + ? 9 \$211.50 \$/acre-ft  Use Customer Retail Unit Cost to value real losses

**WATER AUDIT DATA VALIDITY SCORE:**

\*\*\* YOUR SCORE IS: 65 out of 100 \*\*\*

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

**PRIORITY AREAS FOR ATTENTION:**

Based on the information provided, audit accuracy can be improved by addressing the following components:

- 1: Volume from own sources
- 2: Customer metering inaccuracies
- 3: Unbilled metered



## AWWA Free Water Audit Software: System Attributes and Performance Indicators

WAS v5.0

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Water Audit Report for:   
 Reporting Year:  |

**\*\*\* YOUR WATER AUDIT DATA VALIDITY SCORE IS: 65 out of 100 \*\*\***

### System Attributes:

	Apparent Losses:	<input type="text" value="61.972"/>	acre-ft/yr
+	Real Losses:	<input type="text" value="239.129"/>	acre-ft/yr
=	<b>Water Losses:</b>	<input type="text" value="301.101"/>	acre-ft/yr

Unavoidable Annual Real Losses (UARL):  acre-ft/yr

Annual cost of Apparent Losses:

Annual cost of Real Losses:

Valued at **Variable Production Cost**  
 Return to Reporting Worksheet to change this assumption

### Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	<input type="text" value="11.2%"/>	
		Non-revenue water as percent by cost of operating system:	<input type="text" value="4.0%"/>	Real Losses valued at Variable Production Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	<input type="text" value="10.12"/>	gallons/connection/day
		Real Losses per service connection per day:	<input type="text" value="39.06"/>	gallons/connection/day
		Real Losses per length of main per day*:	<input type="text" value="N/A"/>	
		Real Losses per service connection per day per psi pressure:	<input type="text" value="0.41"/>	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL):  acre-feet/year

Infrastructure Leakage Index (ILI) [CARL/UARL]:

\* This performance indicator applies for systems with a low service connection density of less than 32 service connections/mile of pipeline