



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
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Water Audit Report for: Las Cruces Utilities (3511707)
Reporting Year: **2019** 1/2019 - 12/2019

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.

WATER SUPPLIED

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

Volume from own sources:	+ ?		21,453.000	acre-ft/yr
Water imported:	+ ?	n/a		acre-ft/yr
Water exported:	+ ?	n/a		acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:		
+ ?		<input type="radio"/>	111.117
+ ?		<input checked="" type="radio"/>	
+ ?		<input type="radio"/>	

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

WATER SUPPLIED: **21,341.883** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	9	18,223.000	acre-ft/yr
Billed unmetered:	+ ?	10	0.000	acre-ft/yr
Unbilled metered:	+ ?	9	15.600	acre-ft/yr
Unbilled unmetered:	+ ?	8	156.850	acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt:	Value:		
		<input type="radio"/>	156.850
		<input checked="" type="radio"/>	
		<input type="radio"/>	

Use buttons to select percentage of water supplied
OR
value

AUTHORIZED CONSUMPTION: **18,395.450** acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

2,946.433 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? **53.355** acre-ft/yr

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

Customer metering inaccuracies:	+ ?	8	184.228	acre-ft/yr
Systematic data handling errors:	+ ?		45.558	acre-ft/yr

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

Apparent Losses: **283.140** acre-ft/yr

Pcnt:	Value:		
0.25%		<input checked="" type="radio"/>	
		<input type="radio"/>	

1.00%		<input checked="" type="radio"/>	
0.25%		<input type="radio"/>	

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **2,663.293** acre-ft/yr

WATER LOSSES: **2,946.433** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **3,118.883** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	8	713.0	miles
Number of active AND inactive service connections:	+ ?	9	41,411	
Service connection density:	?		58	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: + ? 75.0 psi

COST DATA

Total annual cost of operating water system:	+ ?	10	\$13,357,474	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?			
Variable production cost (applied to Real Losses):	+ ?		\$184.90	\$/acre-ft <input checked="" type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 80 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: Unauthorized consumption
- 3: Systematic data handling errors



AWWA Free Water Audit Software: System Attributes and Performance Indicators

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***** YOUR WATER AUDIT DATA VALIDITY SCORE IS: 80 out of 100 *****

System Attributes:

	Apparent Losses:	283.140	acre-ft/yr
+	Real Losses:	2,663.293	acre-ft/yr
=	Water Losses:	2,946.433	acre-ft/yr

? Unavoidable Annual Real Losses (UARL): 845.90 acre-ft/yr

Annual cost of Apparent Losses: \$771,308

Annual cost of Real Losses: \$7,255,123

Valued at **Customer Retail Unit Cost**
Return to Reporting Worksheet to change this assumption

Performance Indicators:

Financial:	{	Non-revenue water as percent by volume of Water Supplied:	14.6%	
		Non-revenue water as percent by cost of operating system:	63.6%	Real Losses valued at Customer Retail Unit Cost

Operational Efficiency:	{	Apparent Losses per service connection per day:	6.10	gallons/connection/day
		Real Losses per service connection per day:	57.42	gallons/connection/day
		Real Losses per length of main per day*:	N/A	
		Real Losses per service connection per day per psi pressure:	0.77	gallons/connection/day/psi

From Above, Real Losses = Current Annual Real Losses (CARL): 2,663.29 acre-feet/year

? Infrastructure Leakage Index (ILI) [CARL/UARL]: 3.15

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



AWWA Free Water Audit Software: User Comments

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Use this worksheet to add comments or notes to explain how an input value was calculated, or to document the sources of the information used.

General Comment:	
Audit Item	Comment
Volume from own sources:	
Vol. from own sources: Master meter error adjustment:	
Water imported:	
Water imported: master meter error adjustment:	
Water exported:	
Water exported: master meter error adjustment:	
Billed metered:	
Billed unmetered:	
Unbilled metered:	Includes water used for sewer clean-out.

Audit Item	Comment
Unbilled unmetered:	Includes water used for well blow out, line cleaning and unmetered fire training.
Unauthorized consumption:	
Customer metering inaccuracies:	In 2019, LCU replaced a significant portion of its meters. Since the replacement process was ongoing, there was no need to test existing meters. However, it is likely some errors resulted from the conversion process, so we have assigned a grade of 8 to this category.
Systematic data handling errors:	
Length of mains:	
Number of active AND inactive service connections:	
Average length of customer service line:	
Average operating pressure:	
Total annual cost of operating water system:	
Customer retail unit cost (applied to Apparent Losses):	
Variable production cost (applied to Real Losses):	