

2020 URBAN WATER MANAGEMENT PLAN

APPENDIX E

AWWA WATER LOSS AUDIT REPORTS



AWWA Free Water Audit Software:

WAS v5.0

American Water Works Association
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Reporting Worksheet

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Water Audit Report for: **Monte Vista Water District (3610029)**
 Reporting Year: **2017** **7/2016 - 6/2017**

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:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	7,781.166	acre-ft/yr
Water imported:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	7,333.555	acre-ft/yr
Water exported:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	6,880.870	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	<input type="button" value="+"/>	<input type="button" value="?"/>	3	<input type="text" value="-63.991"/>	acre-ft/yr
	<input type="button" value="+"/>	<input type="button" value="?"/>	8	<input type="text" value="0.000"/>	acre-ft/yr
	<input type="button" value="+"/>	<input type="button" value="?"/>	8	<input type="text" value="0.000"/>	acre-ft/yr

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

WATER SUPPLIED: **8,297.842** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	5	7,869.350	acre-ft/yr
Billed unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	n/a	0.000	acre-ft/yr
Unbilled metered:	<input type="button" value="+"/>	<input type="button" value="?"/>	10	103.042	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+"/>	<input type="button" value="?"/>	10	6.770	acre-ft/yr

Click here: for help using option buttons below

Pcnt: Value: acre-ft/yr

Use buttons to select percentage of water supplied OR value

AUTHORIZED CONSUMPTION: **7,979.162** acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

318.680 acre-ft/yr

Apparent Losses

Unauthorized consumption: **20.745** acre-ft/yr

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

Customer metering inaccuracies:	<input type="button" value="+"/>	<input type="button" value="?"/>	4	162.702	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+"/>	<input type="button" value="?"/>	8	0.250	acre-ft/yr

Pcnt: Value: acre-ft/yr

acre-ft/yr

Apparent Losses: **183.696** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **134.983** acre-ft/yr

WATER LOSSES: **318.680** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: **428.492** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+"/>	<input type="button" value="?"/>	9	200.4	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+"/>	<input type="button" value="?"/>	8	12,449	
Service connection density:	<input type="button" value="?"/>			62	conn./mile main

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

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: 5 psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+"/>	<input type="button" value="?"/>	10	\$15,320,189	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	9	\$2.16	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+"/>	<input type="button" value="?"/>	7	\$844.62	\$/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: Water imported

3: Water exported



AWWA Free Water Audit Software: Reporting Worksheet

WAS v5.0
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Water Audit Report for: Monte Vista Water District (3610029)
Reporting Year:

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:	<input type="button" value="+ ?"/>	<input type="text" value="5"/>	<input type="text" value="8,040.445"/>	acre-ft/yr	<input type="button" value="+ ?"/>
Water imported:	<input type="button" value="+ ?"/>	<input type="text" value="7"/>	<input type="text" value="11,570.188"/>	acre-ft/yr	<input type="button" value="+ ?"/>
Water exported:	<input type="button" value="+ ?"/>	<input type="text" value="5"/>	<input type="text" value="10,306.770"/>	acre-ft/yr	<input type="button" value="+ ?"/>

Master Meter and Supply Error Adjustments

Pcnt:	<input type="text" value="5"/>	<input type="text" value="(-) (0) (.)"/>	Value:	<input type="text" value="-60.813"/>	acre-ft/yr
	<input type="text" value="8"/>	<input type="text" value="(-) (-)"/>		<input type="text" value=""/>	acre-ft/yr
	<input type="text" value="5"/>	<input type="text" value="(-) (-)"/>		<input type="text" value=""/>	acre-ft/yr

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

WATER SUPPLIED: acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	<input type="button" value="+ ?"/>	<input type="text" value="5"/>	<input type="text" value="7,648.580"/>	acre-ft/yr
Billed unmetered:	<input type="button" value="+ ?"/>	<input type="text" value="n/a"/>	<input type="text" value=""/>	acre-ft/yr
Unbilled metered:	<input type="button" value="+ ?"/>	<input type="text" value="9"/>	<input type="text" value="15.812"/>	acre-ft/yr
Unbilled unmetered:	<input type="button" value="+ ?"/>	<input type="text" value="9"/>	<input type="text" value="5.272"/>	acre-ft/yr

Click here: for help using option

Pcnt:	<input type="text" value="0.25%"/>	<input type="text" value="(-) (0) (.)"/>	Value:	<input type="text" value="5.272"/>	acre-ft/yr
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Use buttons to select percentage of water supplied
OR
value

AUTHORIZED CONSUMPTION: acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

acre-ft/yr

Apparent Losses

Unauthorized consumption: acre-ft/yr

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

Customer metering inaccuracies:	<input type="button" value="+ ?"/>	<input type="text" value="3"/>	<input type="text" value="156.416"/>	acre-ft/yr
Systematic data handling errors:	<input type="button" value="+ ?"/>	<input type="text" value=""/>	<input type="text" value="19.121"/>	acre-ft/yr

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

Apparent Losses: acre-ft/yr

Pcnt:	<input type="text" value="0.25%"/>	<input type="text" value="(-) (0) (.)"/>	Value:	<input type="text" value=""/>	acre-ft/yr
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	<input type="text" value="2.00%"/>	<input type="text" value="(-) (0) (.)"/>		<input type="text" value=""/>	acre-ft/yr
	<input type="text" value="0.25%"/>	<input type="text" value="(-) (-)"/>		<input type="text" value=""/>	acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

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

WATER LOSSES: acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	<input type="button" value="+ ?"/>	<input type="text" value="9"/>	<input type="text" value="200.2"/>	miles
Number of <u>active AND inactive</u> service connections:	<input type="button" value="+ ?"/>	<input type="text" value="9"/>	<input type="text" value="12,476"/>	
Service connection density:	<input type="button" value="+ ?"/>	<input type="text" value=""/>	<input type="text" value="62"/>	conn./mile main

Are customer meters typically located at the curbside or property line?

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: psi

COST DATA

Total annual cost of operating water system:	<input type="button" value="+ ?"/>	<input type="text" value="10"/>	<input type="text" value="\$16,647,873"/>	\$/Year
Customer retail unit cost (applied to Apparent Losses):	<input type="button" value="+ ?"/>	<input type="text" value="9"/>	<input type="text" value="\$2.52"/>	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	<input type="button" value="+ ?"/>	<input type="text" value="5"/>	<input type="text" value="\$757.68"/>	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 63 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: Water exported

2: Customer metering inaccuracies

3: Billed metered



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Water Audit Report for: Monte Vista Water District (3610029)
Reporting Year: **2019** 7/2018 - 6/2019

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.

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

WATER SUPPLIED

Volume from own sources:	+ ?	9	8,167.010	acre-ft/yr
Water imported:	+ ?	9	9,521.870	acre-ft/yr
Water exported:	+ ?	9	8,906.742	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:	
+ ? 3	<input type="radio"/> <input checked="" type="radio"/>	-45.667 acre-ft/yr
+ ? 9	<input type="radio"/> <input checked="" type="radio"/>	acre-ft/yr
+ ? 8	<input type="radio"/> <input checked="" type="radio"/>	-6.480 acre-ft/yr

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

WATER SUPPLIED: **8,821.325** acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+ ?	5	7,394.437	acre-ft/yr
Billed unmetered:	+ ?	10	5.810	acre-ft/yr
Unbilled metered:	+ ?	9	35.779	acre-ft/yr
Unbilled unmetered:	+ ?	7	4.604	acre-ft/yr

AUTHORIZED CONSUMPTION: **7,440.629** acre-ft/yr

Click here: ?
for help using option buttons below

Pcnt: Value: 4.604 acre-ft/yr

Use buttons to select percentage of water supplied OR value

Pcnt: Value: 0.25% 2.00% 0.25%

WATER LOSSES (Water Supplied - Authorized Consumption)

1,380.696 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? 22.053 acre-ft/yr

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

Customer metering inaccuracies:	+ ?	3	151.637	acre-ft/yr
Systematic data handling errors:	+ ?	8	18.486	acre-ft/yr

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

Apparent Losses: **192.176** acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? **1,188.520** acre-ft/yr

WATER LOSSES: **1,380.696** acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? **1,421.079** acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+ ?	9	205.0	miles
Number of active AND inactive service connections:	+ ?	9	12,504	
Service connection density:	?		61	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: + ? 3 80.8 psi

COST DATA

Total annual cost of operating water system:	+ ?	10	\$16,711,038	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+ ?	9	\$2.49	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+ ?	5	\$1,033.48	\$/acre-ft <input type="checkbox"/> Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 76 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: Customer metering inaccuracies
- 2: Billed metered
- 3: Variable production cost (applied to Real Losses)



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Water Audit Report for: Monte Vista Water District (3610029)
Reporting Year: 2020 7/2019 - 6/2020

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:	+	?	9	8,196.884	acre-ft/yr
Water imported:	+	?	9	11,475.871	acre-ft/yr
Water exported:	+	?	9	11,431.031	acre-ft/yr

Master Meter and Supply Error Adjustments

Pcnt:	Value:		
+	?	3	-48.360 acre-ft/yr
+	?	9	acre-ft/yr
+	?	8	-10.560 acre-ft/yr

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

WATER SUPPLIED: 8,279.524 acre-ft/yr

AUTHORIZED CONSUMPTION

Billed metered:	+	?	5	7,484.766	acre-ft/yr
Billed unmetered:	+	?	n/a	0.000	acre-ft/yr
Unbilled metered:	+	?	9	42.287	acre-ft/yr
Unbilled unmetered:	+	?	7	4.689	acre-ft/yr

AUTHORIZED CONSUMPTION: 7,531.742 acre-ft/yr

Click here: ? for help using option buttons below

Pcnt: 0.25% Value: 4.689 acre-ft/yr

Use buttons to select percentage of water supplied
OR
value

Pcnt: 0.25% Value: acre-ft/yr

7.50% acre-ft/yr

0.25% acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption)

747.782 acre-ft/yr

Apparent Losses

Unauthorized consumption: + ? 20.699 acre-ft/yr
 Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	+	?	3	610.302	acre-ft/yr
Systematic data handling errors:	+	?	5	18.712	acre-ft/yr

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

Apparent Losses: ? 649.712 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: ? 98.070 acre-ft/yr

WATER LOSSES: 747.782 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: ? 794.758 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	+	?	9	206.1	miles
Number of <u>active</u> AND <u>inactive</u> service connections:	+	?	9	12,586	
Service connection density:	?			61	conn./mile main

Are customer meters typically located at the curbside 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: + ? 3 80.8 psi

COST DATA

Total annual cost of operating water system:	+	?	10	\$19,533.072	\$/Year
Customer retail unit cost (applied to Apparent Losses):	+	?	9	\$2.58	\$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	+	?	5	\$1,108.87	\$/acre-ft

Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 74 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: Customer metering inaccuracies

2: Billed metered

3: Variable production cost (applied to Real Losses)