


Lost and Unaccounted For Water Calculation Explanation

03/02/2021

 Refer to Chapter 5 of the Management Plans for additional information

BACKGROUND:

All municipal providers have some regulation on their allowable lost and unaccounted for water (L&U). Large Providers must limit the L&U water in their distribution system to no more than 10% annually. Small Providers must maintain L&U at or below 15%. Large untreated water providers are required to either line their canals or limit their L&U to no more than 10%. These percentage requirements remain the same from the 3rd management plan (3MP) to the 4th management plan (4MP).

 Losses must be maintained at or under the limit on an annual OR 3-year average basis. A provider is still in compliance with the L&U regulations if the annual L&U is over, but the 3-year average is not.

DEFINITION:

3MP:

With respect to a distribution system other than an untreated water municipal distribution system, the total quantity of water from any source, except direct use effluent, withdrawn, diverted or received by a municipal provider during a calendar year for non-irrigation use less the total quantity of authorized deliveries of water from any source, except direct use effluent, made by the municipal provider during the calendar year for non-irrigation use that are metered deliveries or deliveries that the municipal provider accounts for by a method of estimating water use approved by the director.

With respect to an untreated water municipal distribution system, the total quantity of untreated water from any source, withdrawn, diverted or received by a large untreated water provider during a calendar year for non-irrigation use less the total quantity of authorized deliveries of untreated water from any source made by the provider during the calendar year for non-irrigation use that are metered deliveries or deliveries that the provider accounts for by a method of estimating water use approved by the director.

4MP:


Lost and unaccounted-for water means the total quantity of water from any source that enters a municipal provider's groundwater distribution system during a calendar year less the total quantity of authorized deliveries of water from the groundwater distribution system during the calendar year that are metered deliveries or deliveries that the municipal provider accounts for by a method of estimating water use approved by the Director.

 "Will there be any changes from the 3rd to 4th MP?"

- Although the definition changed slightly in the 4MP, there is no change in the calculation. The 3MP definition refers to the entire distribution system (including effluent pipes) and specifically states that direct use effluent is not included in the calculation. The 4MP definition refers to only the groundwater distribution system, and therefore doesn't need to specifically state that direct use effluent is excluded in the calculation.


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 Lost and unaccounted for water INCLUDES transmission leaks, line breaks, measurement errors/meter inaccuracies, evaporation, illegal connections, and phreatophyte uses

CALCULATION AND EXAMPLES:

L&U is calculated AFTER adjusting the supply by: deducting for water delivered to other right holders and deducting non-potable supplies not in the groundwater distribution system.

 Simply stated, L&U is the difference between all potable supplies (volumes from Schedule A + Schedule E – Schedule D) and the deliveries to customers (Schedule F1 Part 2).

$\frac{\text{SUPPLY - DELIVERED}}{\text{SUPPLY}} = \text{L\&U}$

Example of how the supply adjustments play out:

City Alpha has 36,500 AF of TOTAL water supply:

<p>Scenario 1 16 AF is effluent</p> <p>City Alpha has 20,500 AF of supply</p>	<p>Scenario 2 1,000 AF is delivered to City Beta</p> <p>City Alpha has 35,500 AF of supply</p>	<p>Scenario 3 16,000 AF is effluent 1,000 is delivered to City Beta</p> <p>City Alpha has 19,500 AF of supply</p>
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L&U Example 1- City Alpha:

<p>Supply</p> <p>3,500 CAP 15,000 Surface Water 2,000 Groundwater <u>16,000 Effluent (non-potable)</u></p> <p>36,500 available for all uses 20,500 potable</p>	<p>Deliveries</p> <p>34,000 deliveries</p>
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Unaccounted for water= (36,500 – 34,000) = 2,500

L&U %= (2,500/20,500)*100 = 12.20%

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L&U Example 2- City Beta:

Supply	Deliveries
3,500 CAP	33,000 deliveries
15,000 Surface Water	
2,000 Groundwater	
<u>16,000 Effluent (non-potable)</u>	
36,500 available for all uses, but...	
1,000 delivered to other rights- so	
35,500 available for all uses	
19,500 potable	

Unaccounted for water= (35,500 – 33,000) = 2,500

L&U %= (2,500/19,500)*100 = 12.82%