

Evaporation

Example of empirical formula:

For lake Hefner, OK):

$$E = 0.000241 (e_s - e_8) V_8$$

where:

e_s, e_8 = vapor pressure at water surface and 8 m above
(in-Hg)

V_8 = wind speed at 8 m above (in mi/d)

Example:

Given: $V_8 = 1000$ mi/d & $e_s, e_8 = 0.5, 0.3$ psia

Find: $E = ?$

Solution:

$$\begin{aligned} E &= 0.00241(0.5 - 0.3) \text{ psia} \times 2.036 \text{ in-Hg/psi} \\ &\quad \times 1000 \text{ mi/h} \\ &= 0.981 \text{ in/d} \end{aligned}$$