RAINFALL HARVESTING NOMOGRAM: TUCSON, ARIZONA

Developed by
Office of Arid Lands Studies
University of Arizona

The accompanying diagram — called a <u>nomogram</u> — is a set of graphs showing the numerical relationships among four variables:

- Rainfall catchment (roof) area;
- Rainwater storage volume;
- Rate of use of rain; and
- Dependability of rainwater supply.

If any three variables are known or assumed, the remaining one can be determined readily by use of the nomogram. The <u>dashed line</u> illustrates how the nomogram can be used in designing a rainwater harvesting system under Tucson's rainfall conditions:
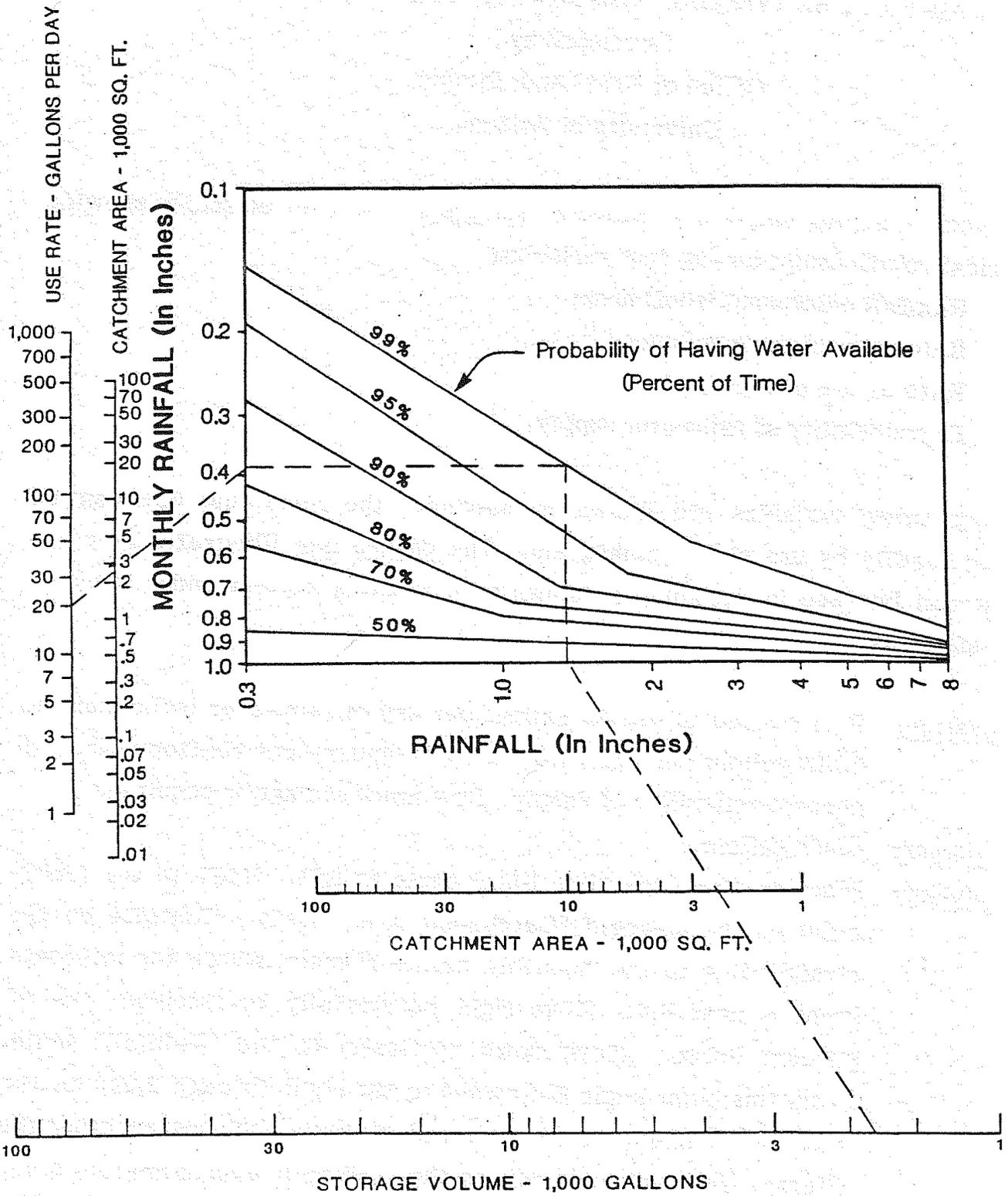
<u>Question:</u> It is desired to use 20 gallons per day of rainwater (equivalent to 7,300 gallons per year) from a 2,500-square-foot rooftop with a 99 percent reliability of supply. How much storage is required?

<u>Answer:</u> 2,000 gallons.

<u>Solution:</u> Start at 20 on the "Use Rate" scale at left. Move to the 2,500-point on the adjacent "Catchment Area" scale. Continue on the straight line to the "Monthly Rainfall" scale, where the intercept point is near 0.4. Move right horizontally to intersect the 99 percent curve. Move down vertically to the "Rainfall" scale. From this point angle downward to the right through 2,500 on the lower "Catchment Area" scale and continue until intercepting the "Storage Volume" scale, where the reading is approximately 2,000 gallons.

RAIN HARVESTING NOMOGRAM, Tucson, Arizona