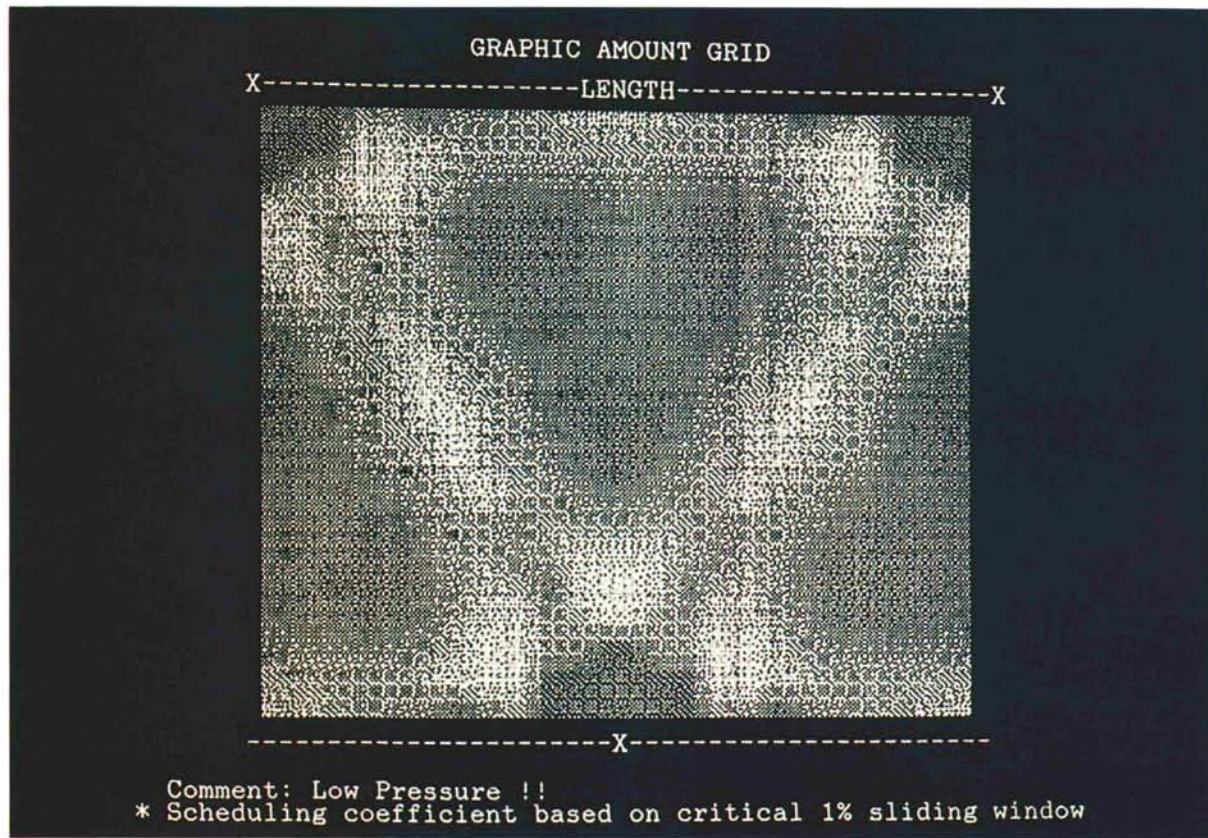


Sprinkler Uniformity Evaluation

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The heavily shaded areas indicate dry spots in the irrigation area.

IN THE PROCESS of evaluating the performance of an irrigation system, many of us have become well versed with the importance of proper sprinkler head spacing, mainline looping, and pumping station and operational pressure. Having checked all of these major system components, the final step is to take a closer look at how evenly the sprinkler head itself distributes water over the course.

The distribution of water from a sprinkler head using information taken from a typical rain gauge test is plotted on a graph. The X-axis is the distance of the rain gauge from the sprinkler head, and the Y-axis is the amount of water captured in each rain gauge. While this chart shows us the water distribution for a single sprinkler head, it fails to reveal the water distribution when operated in relation to its neighboring, or backup sprinkler heads.

A computer program developed at the University of California, Fresno, Center for Irrigation Technology under the direction of Kenneth H. Solomon reveals a figure showing what happens with respect to water distribution. This figure, referred to as a "denso-gram," is based on the same information as the graph for the single sprinkler head. The lightly shaded areas of the denso-gram indicate wet spots, whereas the darker areas indicate dry spots.

To interpret the meaning of the denso-gram, the computer also generates a scheduling coefficient. This value indicates the amount of extra water required to provide enough moisture to the dry areas indicated on the denso-gram. For example, if the pumping station is capable of applying 0.2 inches of water every 30 minutes, then the irrigation cycle must be scheduled for 51 minutes (30×1.17) in order to ade-

quately moisten the critical areas. Naturally, this is a waste of water and a needless expense from the standpoint of water and electrical costs.

In the Southwest, reducing the scheduling coefficient is vital for water conservation; however, this Turf Tip can also be used in other areas of the country for improving turfgrass quality. For example, take a case where dry spots in the fairways require hand watering during the summer months, or where wet spots are affecting playability. More than likely an effort has been made to check sprinkler head spacing, mainline looping, and pumping station and operational pressure. If so, the time has come to check sprinkler head water distribution by using this new technology.

If you would like information, contact: The Center for Irrigation Technology, California State University, Fresno, CA 93740, (209) 278-2600.