

GOLF 'SCAPING

Retrofitting for effluent irrigation

Though a test of patience, this process has its positive long-term gains in the amount you pay for water and in its environmental compatibility.

■ Mike Huck didn't fully appreciate how frustrating a golf course superintendent's life can become.

That was until he oversaw the retrofitting of an irrigation system to use reclaimed wastewater at Mission Viejo Country Club just south of Los Angeles. This, he readily admits, turned out to be a major undertaking, in spite of the fact that the course had used treated effluent previously. But when the local water reclamation plant closed down to upgrade its treatment capabilities, Mission Viejo had to switch to potable water for a while.

Huck had been hired as its 13th superintendent about a year before this all began happening.

"You start to wonder if it's all worth it just to grow, green healthy grass," he says half seriously.

Huck says that while his course was waiting for the reclamation plant to reopen and again supply it with treated wastewater, a host of new regulations had blossomed.

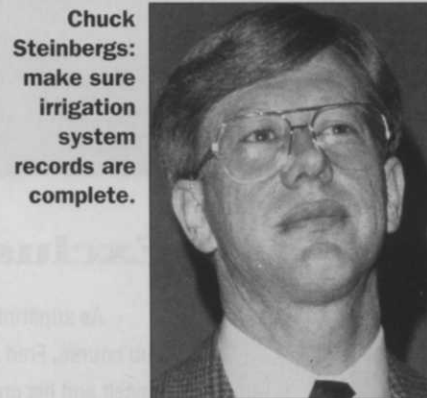
Adding to the frustration, the water reclamation (treatment) plant is located just across the street from the course!

"Our prior permit just wasn't good enough anymore," he says. What followed, in short order, was a seemingly endless scramble to fulfill regulations and inspections.

"When we got ready to ask for the reclaimed water, they wouldn't deliver it to us," says Huck. Not, at least, until the course satisfied every requirement, many of them directed at insuring that the



Mike Huck: says don't underestimate complications when retrofitting an irrigation system.



Chuck Steinbergs: make sure irrigation system records are complete.

course's potable and reclaimed water are separate. Regulations require strict failsafe measures to guarantee that they stay that way too.

Eventually Huck's irrigation plans had to be filed with the health department, the water district and the state water quality control board.

Chuck Steinbergs, an engineer with the Orange County (Calif.) Water District, in fact, concurs that retrofitting an irrigation system to use reclaimed water can be a lengthy process. It often takes anywhere from six months to a year, he says.

"Don't rush into this project because you'll have to live with it when it's done," he says.

His suggestions:

1) Confer with a retrofit design consultant. "You need someone who has gone through the process with regulators, with

the nuts and bolts of design, working with other golf course superintendents," he says.

2) Keep meticulous records concerning your irrigation system. "The fewer records we have, the more costly it is to do the retrofit, and the more guesswork there is," he says.

3) Bring health regulators into the process early. "It gives you the opportunity to negotiate with the regulators about how things can be mitigated," says Steinbergs.

"People here don't need too much convincing about the value of using recycled water, but nonetheless when you get down to an individual user who has economics and a budget to keep, we realize we have to work out something that both he and we can live with," adds Steinbergs.

As it turned out, the cost of reclaimed water, which jumped from \$200 to \$328 per acre-foot from 1992 to 1993, didn't turn out to be one of the more pressing concerns at Huck's Mission Viejo course. Using potable water, which isn't allowed anyway, would have cost \$500 per acre-foot.

Most headaches, he says, were unexpected. For instance, the course's irrigation storage pond had to be drained for a bulldozer to remove 3 1/2 feet of muck from its bottom. In the process Huck said the pond was deepened to 10 feet to hold a three-day charge of recycled water. That work added \$60,000 to the cost of the retrofit.

—Ron Hall

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