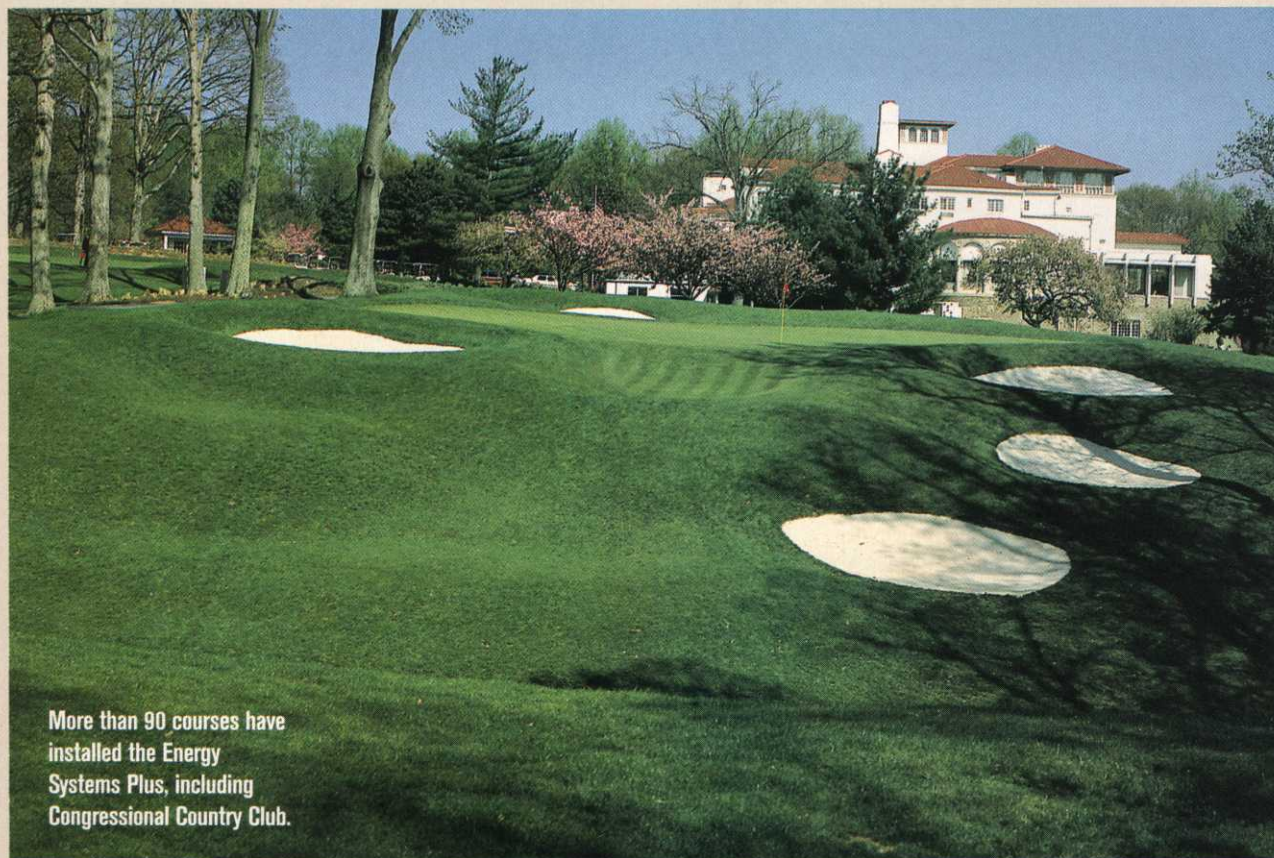


Sound Effects



MIKE KLEMM

More than 90 courses have installed the Energy Systems Plus, including Congressional Country Club.

Problem

Irrigation water is carrying away minerals and fertilizers in the soil rather than leaving them behind to be absorbed by the turf's roots.

Solution

Radio-frequency sound waves ionize irrigation water. The treated water positively affects soil pH and salt levels, mineral uptake by grass plants, chemical application and irrigation effectiveness.

System uses frequency waves to ionize irrigation water to help improve turf

BY PETER BLAIS

Ron Streck has done just about everything in the golf industry, from working on a grounds crew as a youth to playing on the PGA Tour to owning a golf course to his latest endeavor — which brings him back to his course-maintenance roots. His firm, Complete Water Systems, uses sound-wave technology to improve golf course water quality.

"I was attracted to this part of the business because I thought I could help make superintendents' jobs easier," says the 49-year-old owner and president of the Tulsa, Okla.-based firm.

Basically, Streck's Energy Systems Plus (ESP) equipment uses radio-frequency sound waves emitted from antennas placed within the course's pump station. The 30,000 to 40,000 frequency waves ionize irrigation water as it passes by the antennas and disburse it through the irrigation system, where the treated water positively affects soil pH and salt levels, mineral uptake by grass plants, chemical application and irrigation effectiveness, according to the company. Streck says all the water running through an 8-inch pipe, typically around

3,400 gallons a minute, can be treated and will not lose its charge no matter how far it is pumped.

"The science has been around a long time. It changes the make-up of the water," says Streck, who won the 1978 San Antonio-Texas Open and 1981 Houston Open before injuring his knee in the mid-1980s and launching CWS in 1993 with partner/inventor Bud Thomason.

The system costs \$25,000 to \$35,000 and takes three hours or less to install. Maintenance is minimal, Streck says. An occasional transformer replacement within the 2-foot-by-2-foot box, which contains six transformers placed near the pump station, is usually the only part replacement, Streck says. The unit runs on a 120-volt current and costs pennies a day to operate.

More than 90 courses have installed the system over the past 10 years, Streck says. Pointe Royale Golf Course in Branson, Mo., was the first in 1993. Tulsa (Okla.) Country Club was second in 1994. Since

then, Streck adds, such well-known layouts as Congressional Country Club in Bethesda, Md., Pebble Beach Golf Links and Spyglass Hill in Pebble Beach, Calif., and Riviera Country Club in Los Angeles have implemented the system.

Glenmoor Golf Club in Cherry Hills, Colo., installed its system in 1998, says superintendent Dennis Vogt. The course's hard clay soil, along with salt- and bicarbonate-laden irrigation water, led a consultant to suggest the system as a way to get better water penetration and flush salts to the surface.

"We have seen a dramatic change in the amount of puddling, we've used less water and the condition of the course seems to have improved," Vogt says. "We've done other things, but the improvement coincided with putting the ESP in."

"Ron has done a couple upgrades for us, but that's it. There's virtually no maintenance," Vogt adds. "We turn the system off

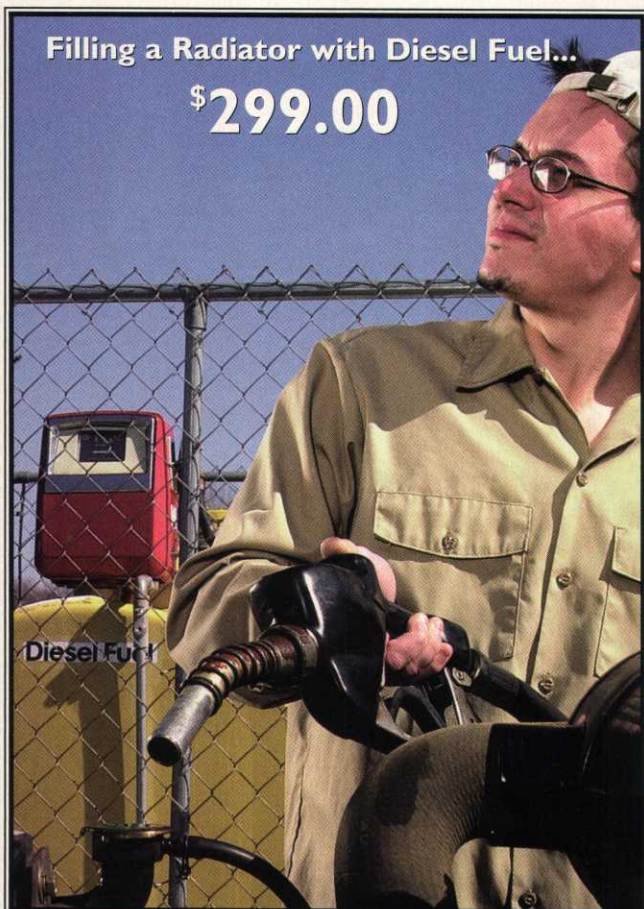
Continued on page 102

"We've seen a dramatic change in the amount of puddling, we've used less water and the condition of the course seems to have improved."

DENNIS VOGT, SUPERINTENDENT
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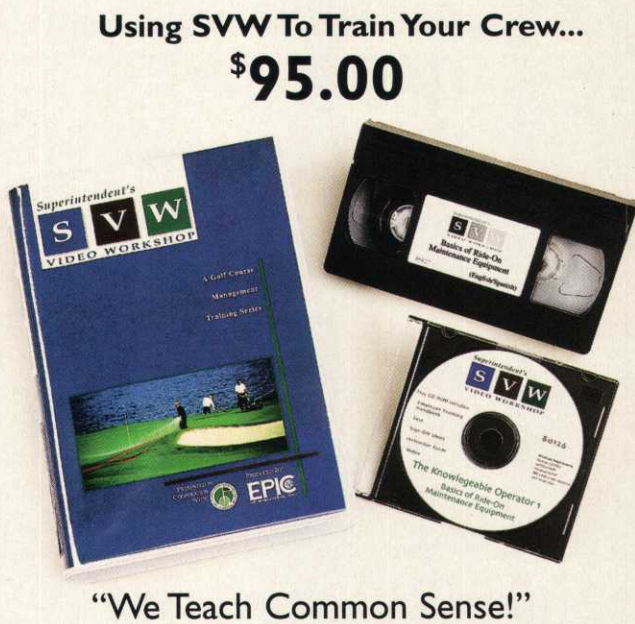
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Real-Life Solutions: Water Treatment

Continued from page 101

in the wintertime when we blow out the irrigation pipes and put it back on in the spring. It is inexpensive to operate."

Shane Schutte, superintendent at The River Golf Club in North Augusta, S.C., installed the treatment system in November 2000 to deal with a rather unusual problem for a Southern course: mineral-free water from the aquifer-fed spring that fills his irrigation lake. Courses in Northern areas — where irrigation ponds are commonly filled by heavy, mineral-free snow melts — are more likely to have this problem than lowland courses, where irrigation ponds tend to be packed with minerals, Schutte explains.

He first realized the irrigation water was carrying away the minerals and fertilizers in the soil rather than leaving them behind to be absorbed by the turf's roots when he checked the water drawn down through his course's greens by the underground airflow system. The hunter-green-colored liquid that emerged below putting surfaces was full of fertilizers and minerals.

"Water will mineralize itself the first chance it gets," Schutte explains. "As soon as I would irrigate [with the untreated water], it would strip all my fertilizers out of the soil."

Why was this happening and how did the Complete Water Systems equipment solve the problem? According to Schutte, his untreated water carried a negative charge, while most of the desirable nutrients in the soil carried a positive charge. The opposite charges attracted, meaning the water molecules bonded with the nutrients and washed them away from the plant roots.

What the treatment system does, he says, is slam electrons into the water, giving it a neutral charge. All the nutrients stay in the soil rather than bonding with the water, allowing the grass roots the opportunity to absorb the nutrients. Within a couple of weeks of using the system, the irrigation water coming out Schutte's greens was crystal clear,

What the treatment system does is slam electrons into the water, giving it a neutral charge.

meaning it was carrying away virtually no minerals. Schutte says he went from having almost no roots on his putting-surface grass to having turf with roots almost 6 inches long.

"I'm growing bentgrass in Augusta," the superintendent says of his putting surfaces, which are located just a few miles from famed Augusta National.

Schutte says the system paid for itself fairly quickly, cutting his watering by 30 percent and fertilizer needs by two-thirds.

"I went from watering 15 minutes a night down to 10," he says. "That has to do with the water molecule size. With the water [prior to treatment] having a negative charge, it was forming hydrogen bonds with itself. So the water molecules were very large. This unit breaks everything down into single H₂O's, meaning the soil can actually hold the water better. That's why I believe I water less."

"Anyone's water is also going to take some nutrients away," Schutte adds. "When you pump this water, it takes none of your nutrients away unless you get rain."

Streck, who plans to play some Champions Tour events this year, is in charge of Complete Water Systems' golf division, which makes up 10 percent to 15 percent of the company's sales.

"Agriculture is the primary business," he says. "Farms can till the soil, let a field lie fallow for a year or two and let the soil settle down. A course cannot do that. It is open 365 days a year. Our product will do positive things to the soil without tilling. It is a soil-conditioning system." ■

Blais is a freelance writer from North Yarmouth, Maine.