Technology and consortium members vide research directly related to the EPA's universitie... and improve the environment.

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WEST VIRGINIA ELECTS LEADERS
The West Virginia Golf Course Superintendents Association has elected officers for 1992.


Serving on the board of directors are Howard H. Lott of Bridgeport Country Club; Carl Buttry of St. Marys Golf Club; Gary Rough of Riverside Golf Club; David A. Tremain of Lakesview Resort (North Course); Dr. John F. Baniki of WVU Extension Service; and Richard A. Patmak of Tri-Star Soils, Inc.

The officers and directors will guide the association in 1992 through its regular monthly educational meetings, annual scholarship and research fund-raiser golf tournament in June, and annual turf conference and show in November.

40 YEARS IN FLORIDA
The Florida Turfgrass Association will cel- The Florida Turfgrass Association will celebrate its 40th year at its annual conference and trade show, Sept. 20-23 at the Prime F. Osborn Convention Center in Jacksonville. This year's conference will feature an educational program led by national experts in turf and related fields. The event draws more than 2,000 visitors.

More information is available from the Florida Turfgrass Association and Research Foundation at 800-882-6712.

RESEARCH SUPPORTED
The New Hampshire GCSA said it will continue its support for one more year of two research studies — Stan Swiler's study of using nematodes to control cutworms, and Dr. John Roberts' research on winter kill. The chapter donated more than $11,000 for research in 1991.

GOLF COURSE NEWS

EPA FUNDING RESEARCH
The Environmental Protection Agency will give $1 million a year for 10 years to each of four universities chosen as EPA Exploratory Environmental Research Centers. Of those chosen, the University of Maryland System at Horn Point was chosen to do multi-scale coastal marine ecosystem research, while the University of California at Davis was picked to study ecotocology. The centers are being established to provide research directed to the EPA's long-range research strategy.

An independent scientific peer review panel and site review teams recommended the grant recipients from among 87 that applied. Along with Maryland and California universities, the Massachusetts Institute of Technology and consortium members Caltech and New Jersey Institute of Technology will study transformation, transport and control of airborne organics; and Michigan Technical University, with consortium members Wisconsin and Minnesota, will study clean manufacturing technologies.
Gainey Ranch's treatment plant solved water question

Continued from page 17

table is about 330 feet down — when you can get a drilling permit. "We run two wells for potable water, and it's hard water," he added.

But tertiary-treated water seems to be gaining favor in the Valley of the Sun. In fact, Corthouts predicts that eventually all new golf courses in Arizona will keep green via treated effluent water. "Older courses in this area are grandfathered with well water or city water," he said.

When asked the biggest challenge in irrigating with treated effluent water, Corthouts replied: "Sodium. Not all nitrates or phosphates are removed, either, so when water gets to the lakes on the course, it tends to promote weed and algae growth. It's hard to leach sodium out of clay."

His solution is to apply sulfur semi-annually and gypsum annually. "We lay down 100 pounds of sulfur and 200 pounds of gypsum per acre in June, then add another 100 pounds of sulfur in August," he explained.

"We do a lot of aerifying. We have one large machine, which we run every day." A positive result is the effluent water makes an attractive, even lush, course all the more possible. For Arizonans, golf courses have the largest open water display within two hours of downtown. Gainey Ranch has 183 acres under water in six lakes, with 11 acres holding only treated water. The rest get well water.

When spring temperatures of the ponds reach 90 degrees, algae bloom is a real challenge.

"We use aerators in our lakes, making it through an electrical arc. It gives us 63, but with a negative charge instead of a positive charge," Corthouts said.

He noted that Gainey Ranch was one of the first in the Southwest to try the negative charge, but the concept is becoming popular. "It's a water-treatment technique that leaves no residue," he said. "It has a half-life of just 20 minutes, then turns back into oxygen. The treatment saves us money in the long run."

He said ozone has cut annual chemical bills by $50,000. "O3 pays for itself in three years. It was easy to sell upper management on it," he added.

Because the lakes also are used for storage, Corthouts said, "We could go a week or two in the summer should the treatment plant have to shut down for repairs."

Watering is a daily summer chore, but in winter they have to keep the sprinklers going just two or three times a week.

"With the treatment, there's little sludge to clog sprinklers. The water is crystal clear. Turbidity is very low."

"Water, itself, seldom is a problem in the sprinkler. The challenge is the algae," Corthouts said. He also noted the ponds tend to darken, and his crew has to take standard precautions when they draw from the ponds, just as do courses using ponds filled by other water sources.

Another cost-saving step is that the pond treatment system was designed to be 90 percent efficient at the worst time of year, rather than the more costly 100 percent. "That other 10 percent would cost us a fortune," Corthouts explained.

Jim Tombaugh, treatment plant operator, said turbidity is less than 1.0, versus drinking water standards of 0.4.

"There are still minerals and nutrients in the water that don't meet potable water requirements," he said.

Tombaugh said the treatment system is limited to biological methods. "The only chemical we use is chlorine."

One advantage is that the plant, which maintains a slow profile behind a wall on the edge of the complex, blends in with the course's overall design. It doesn't seem to be a sewage treatment plant.

Tombaugh said a 30-inch main comes into the plant. But, by the time the main joins its brothers and arrives at the regional treatment plant across the metro area and 40 miles away, the volume is 120 inches.

Tombaugh noted that the golf course helps keep the entire system less costly. Not only does Scottsdale profit by selling water to Gainey Ranch, but there's less volume to send to that regional plant.

Even with treated water, it's a fight to have enough water and leave time for golfers. They can't sprinkle between foursomes, and with 220 per day, it's hard to shut down nine holes for watering. For that reason, cheat watering is from 9 p.m. to 6 a.m. Sprinkler checks and repairs are made between foursomes.

Making sure maintenance doesn't interfere with the game keeps Corthouts and his crew busy. But the real challenge is getting enough water on the course, even with daily waterings. "June and July are particularly challenging, but during August the rains catch us up. We get seven inches annually, with half that in our August 'monsoon' season," Corthouts said.

That also reduces need for the plant's water. Tombaugh added, "The plant's designed for extended aeration and year-round nutrient removal. We run three aeration basins in the winter and five in the summer. We also have sand filters, using 11-inch-thick sand beds, and we clean those beds several times a day."

This permits the operator to filter out colloidial mass. That mass goes back into the sewer system, and again is removed at the regional plant. They don't store or truck solids at Gainey Ranch. The goal is to keep the plant's people at work.

Essential to a successful on-site treatment plant is communication. "We're right next to each other," Corthouts said. "If either has a problem, the other knows about it immediately. If the plant has to shut down for repairs, for example, we can start drawing from our ponds. This plant can refill a pond in just eight hours."

Best of all, golfers are seldom aware that they're playing near a water source. They play on a green surface made possible by wastewater.

Tertiaire-treated effluent water makes this waterfall possible, says course superintendent George Corthouts.

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