

ENVIRONMENTAL COMPLIANCE

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ing, acid creates solubility, and caustic creates precipitates.

In practice, the pH is controlled to a point around 8.5-9.5 pH using caustic soda, the precipitates then form immediately.

A specialized electrically charged chemical or two, called **polymers**, are then added at about the 2-10ppm range and mixed in.

Polymers have many molecular receptacles that are designed to attract and coagulate the microscopic precipitates into visible particles (called *pin floc*) that are increasingly heavier than water. This coagulant (*sludge*) then rapidly settles to the bottom and clear water exist the top.

The precipitate and settling

method is generally considered to be $\geq 99\%$ efficient, so the sludge will contain most of the pollutants present. The resulting treated water is generally *very clean*.

The small quantity of sludge produced is poured out and dried for easy handling and economical disposal. Typically, a sludge is poured into a bag filter and allowed to further dry by gravity.

If you are considering this treatment method, you should consider the cost of treatment chemicals and of sludge disposal. If you are treating a hazardous wastewater (not expected at a typical golf course), then you would also have state permitting requirements.

In next month's article we will cover the rest of the treatment methods: Ozone and Chlorine.

Making a Point About Change

Having trouble persuading your staff that incremental change is worth the effort -- and that change doesn't have to be immediate, dramatic and sweeping?

If so, try this exercise suggested by Richard Ruhe, a consultant with Blanchard Training and Development:

Tell staff members to imagine they've just been told they have won a state lottery and they have one minute to choose between two payment methods:

- ⌘ **\$250,000** a day for 30 days.
- ⌘ **One cent** the first day and double the amount each day for 30 days.

To make it easier for you: The first method totals \$7.5 million, the second method totals, \$10,737,128.23!

Tips from the USGA Know Your Limits

by Paul Vermeulen,
USGA Agronomist

With spring just around the corner it won't be long before the grass starts growing faster than most maintenance crews can cut it. To the delight of many golfers, such miraculous growing conditions make it possible to increase the putting green speed by simply lowering the height of cut below normal limits.

Unfortunately, spring eventually turns into summer. It is at this point in time that a lack of understanding on part of many golfers meets with the Superintendent's reality of working with an uncooperative Mother Nature. The result is one of golf's biggest controversies - Putting Green Speed.

In the midst of controversy many individuals often look for someone to blame. Golfers naturally blame Superintendents, as I have heard on occasion someone say, "*The greens are always faster at the course down the street and they NEVER have problems. I think our Superintendent is just making excuses.*" Superintendents, on the other hand, have a tendency to blame the PGA TOUR or the USGA, as I have also heard on occasion someone tell me where I can shove my Stimpmeter!

Looking for someone to blame, however, will never resolve the issue. It's not the fault of Augusta National that golfers believe the greens are always faster somewhere else. And it's not the fault of the PGA TOUR, nor the USGA that golfers believe greens should roll 10 feet 6 inches.

In an imperfect world the only way to address controversy is by providing all parties with the facts. In other words, we need to educate golfers, so they themselves can appreciate the realities, or rather the limits, of putting green maintenance.

A good education should start with an understanding of the past; the fact is that green speed has increased dramatically since the turn of the century. What evidence is there you ask? First, let us take a look at the equipment. On a tour through the museum at Golf House in Far Hills, New Jersey, golfers can examine putters from each decade and see that the slope of the face has dropped from 10 degrees in the early 1900s to 3 degrees in 1994. Why? Because improvements in mower technology have allowed the height-of-cut on greens to drop from above a 1/4" to below a 1/8".

Second, let us take a look at records kept by William Bengeyfield, former Western Region Director, USGA. On average, the putting green speed across California was below 7 feet in 1977 and 1978 when a survey was taken by

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CLASSIFIEDS

Employment Opportunity

Assistant Superintendent Needed
Tahoe Donner Golf Course

Seasonal position available April 1, 1994.

Requirements: 2 year degree in Turf Management, Horticulture or related field. Pesticide Applicators license or in training. Mechanical and irrigation skills helpful.

Experience: 3 years on golf maintenance staff

Other: High achiever, self-starter and motivator

Salary range: \$2,100 to \$2,600 per month D.O.E.

Send Resume to: Joel Blaker
11509 Northwoods Blvd.
Truckee, CA 96161

KNOW YOUR LIMITS

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taken by the USGA Green Section staff. In fact, the fastest green measured by Bill during this survey was (put on your seat belt!) *8 feet 6 inches!*

What is the average green speed today? Well, the answer depends on which month of the year you are talking about. As I mentioned earlier,

the grass grows better in the spring than it does in the summer. In the spring, the greens can be cut much shorter and average speed is probably close to 9 feet. But, in the summer the grass must be cut higher, so the average speed should be closer to 8 feet.

If you need more help educating your golfers on the topic of putting green speed,

Designing A Training Program

Need a custom-designed training program rather than an off-the-shelf one?

Here's some advice from Fred Tietz, senior consultant for The Dreiford Group of Bethesda, Md., on how to design that program:

☞ **Focus** sharply on outcomes. What do you want participants to do? How will you know if all of those involved feel the program was effective? What should they say when it's over?

☞ **As you** move along, keep checking with appropriate government agencies or your upper management to be sure you're on track.

☞ **Determine** the participants' experience, education level and exposure to training. Different learners need differ-

ent training techniques.

☞ **Keep in mind** that successful training programs require improving knowledge, skills and attitudes. Many programs neglect attitudes.

--For **technical knowledge**, focus on classroom work and written assignments

--For **skill building**, concentrate on simulation and role playing, or hands on.

--For **changing attitudes**, think of case studies, role modeling or bringing in someone who can personally describe the benefits received from similar training.

☞ **Plan a pilot** program using a true cross-section of learners. Later, modify the program based on the pilot's results.

and other topics relating to course maintenance, let me suggest inviting them to our upcoming Regional Conferences co-sponsored with the Northern and Southern Golf Associations. The Southern

California conference will be held at the Hyatt Regency in Garden Grove on March 15th, and the Northern California conference at Castlewood Country Club in Pleasanton on March 16th.

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