

Solving Drainage Problems

Ponding water threatens turf, tracks from coast to coast

By Chris Harrison

Once athletes get to a certain age, the thrill of splashing around on a wet, muddy field fades fast. Wet turf is dangerous turf: dangerous to athletes, dangerous for the grass, and dangerous for the career of any grounds manager who does not fix the situation promptly.

SBC Park, home of the San Francisco Giants, is subject to repeated and heavy rain in the course of a season. At certain times of the year, it can be a bear to keep the outfield playable as water drains from the track onto the field.

At the other end of the nation is what may be an even more amazing field . . . the home of the Panthers of the Polytech School District in Woodside, DE. The high school's stadium might be the farthest north seeded bermudagrass football field anywhere in the nation.

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The field, planted last year from seed, is just beautiful. Unfortunately, the track around the field did not get the message about how much effort the grounds department puts into growing bermudagrass near Dover, DE. Again, it was poor drainage around a track that caused headaches; this time, not for the grass but for the track itself.



Giant steps

According to Scott MacVicar, head groundskeeper for the San Francisco Giants and a member of this magazine's Editorial Committee, his drainage woes relate directly to inclement weather at certain times of the year.

"With my microclimate, the outfield near the warning track does not dry out. The sun does not get on my outfield grass in March and April and from late September through October," MacVicar explains.

The all-bluegrass stadium is in its eighth season and its drainage problem traced back to the original design. There was no drainage under the warning track and any rainfall runs off the track directly onto the field. Following each heavy rain, it took a painfully long time



Sod removal



Installation of Multi-Flow



System ties into main drainage



Ponding 100% eliminated

especially for right field to dry out. The area in front of McCovey Cove remained soft long after the rest of the field was playable.

"There is no drainage under the warning track and there is no collection drain on the perimeter, either," MacVicar continues. That includes the whole area from right center field all the way to the visitor's bullpen on the first base side.

"I have a rubber warning track that goes from the right field foul pole, around behind home plate and out to the left field foul pole," he continues. "Anything on the rubber track drains right into the grass."

Additional drainage was installed in the outfield about three years into the park's life. It works to some degree, but MacVicar says it really does not get rid of that much water.

The answer at SBC Park is constant aerification. "Before every rainfall, I make sure I get the aerifier out and poke some holes in the sod to keep it from ponding," MacVicar says.

He notes that the purpose of the aerification has nothing to do with getting air to the roots or moving nutrients into the soil. It is simply to open up any earlier aerification holes that got sealed when mowers and other equipment rolled over them.

"I want to be sure those holes are wide open," MacVicar continues. "I make two passes with the aerifier."

He uses a solid tine aerifier. "If I don't get holes in the turf, I have standing water," he says.

MacVicar and the organization have considered a total makeover, but rejected the idea. "There is no reason to yank it all out, bring in sand and re-laser grade the area," he feels. "For the time being, we are

going to leave well enough alone. There are other ways to solve the problem."

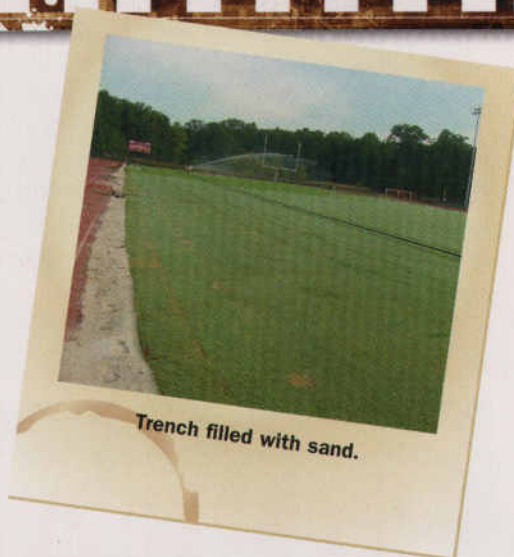
One of those solutions appears obvious: Do not water the track. With the problems from natural rainfall being serious enough, there is no reason to add to the situation with added irrigation. The aerification seems to do the trick with natural rainfall.

"It took me a while to figure it out. But it works," MacVicar says.

Working the track

Mike Kelley, supervisor of buildings and grounds at Polytech School District, got tired of hassling with cool-season grasses that did not stand up to the wear and tear the athletes were imposing. The stadium field is used for football, field hockey, boys and girls lacrosse, and boys and girls soccer.

"We had rye and bluegrass and they just did not hold up," Kelley says. He tried converting to a turf-type fescue. "I got tired of fighting it," he says. Once fescue starts to fade, it becomes clumpy. Even with aggressive overseeding, he could not keep it up to his expectations.



Trench filled with sand.

And, he was worried about athlete safety.

Polytech, formerly a vo-tech school, became a comprehensive school in 1990. Centrally located in Delaware, it hosts a number of regional and state tournaments. Kelley first did a practice hockey field in bermudagrass five years ago. "It was just an experiment," he admits, "but it was so well received, we decided to do the game field in bermuda." Two years ago, they did their football field in bermudagrass, as well.

Kelley's budget is not rich. "It would cost \$25,000 to sod a field to bermuda. So I started looking at seeded varieties," he says. Yukon and Riviera were the leading candidates. He looked at those varieties in Oklahoma – about the same conditions as in Delaware – and decided to go with Riviera. "It's more aggressive laterally than Yukon," he explains. And, he could do the job for \$5,000.

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IRRIGATION & DRAINAGE

was trouble in paradise. Water was ponding off the track and threatened to undercut the track itself. Kelley was not too worried about the bermudagrass turf since its drainage system was handling things well. But the track was a potential problem and a potential hazard.

"Poor drainage was causing degradation of the track," Kelley says. The closest installed drainage was 20 feet from the edge of the track. Even with the lip cut back, the water would run off and then pond.

To make matters worse, there were two additional pressures: a statewide track tournament was scheduled. Kelley wanted to resurface the track and had \$50,000 in the budget to do the job. But it would have been foolhardy to spend that kind of money on a track that was being further undermined by every rainstorm.

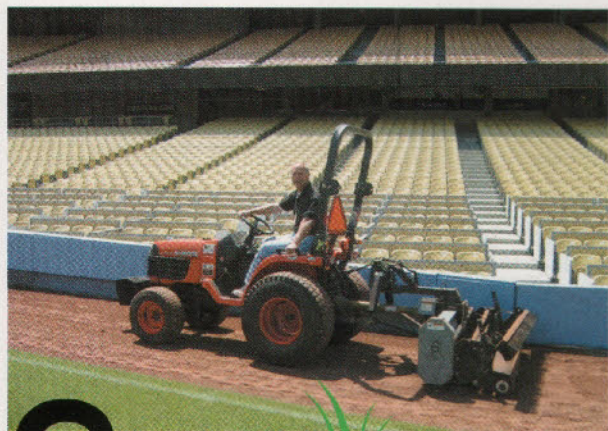
"We had good drainage in the field. I felt that, if we could tap into the drainage in the field, we would be okay," Kelley says. He looked at solutions like perforated 4-inch PVC but did not like the outlook.

"I needed to get the water off the track," he says. He contacted DVH Athletic Turf of Cherry Hill, NJ. Larry George recommended that they install Multi-Flow drainage, from Varicore Technologies, Prinsburg, MN (www.varicore.com). Typically, it is installed vertically in natural turf settings and horizontally under synthetic turf. There are some exceptions to this practice but generally this takes best advantage of Multi-Flow's shape.

George took a sod cutter and ran it around the field, removing an area

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off the track."
- Kelley**

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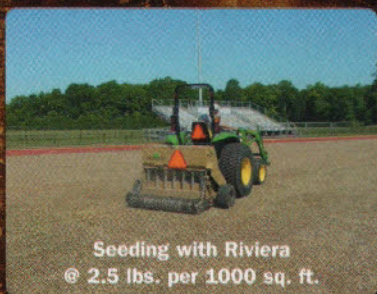
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15 days after seeding.



30 days after seeding.

two rolls wide. They actually re-used one of the rolls when the job was done.

"The drainage eliminated our ponding by 100 percent," Kelley says. "I'd recommend it to anyone who did not install drainage at the time of initial construction."

They went down about two feet and backfilled over the drainage with sand. The Multi-Flow was tied back to the field's main system, which is corrugated steel pipe.

"It's been working great," Kelley says.

The bermudagrass has not quite filled in all of the sand trench, but it should be grassed by the time the season starts this fall.

"If you want to renovate a field during the summer when you don't need it and with no grading, seeded bermuda is the way to go," Kelley says. Spring sports are finished and the field will be playable by fall.

"It's a safer environment for the athletes, too," Kelley maintains. "It requires almost no fungicide use, no pre-emergent crabgrass killer, and little broadleaf material because of the density of the turf cover."

That dense turf is safer for the athletes when they make their cuts.

Kelley got the football field into condition in about nine weeks. "I could do it in eight weeks. But I'd rather have ten," he says. Part of the challenge was an order that the stadium field not be killed out until after

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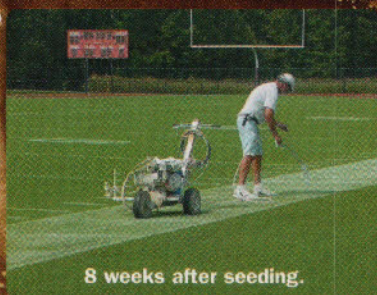


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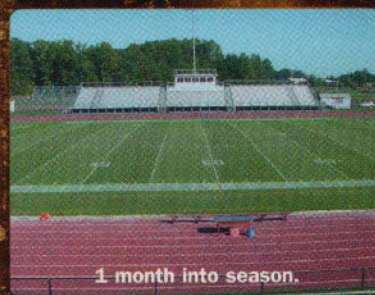
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8 weeks after seeding
ready for first game.



8 weeks after seeding.



1 month into season.

graduation so the place would look “presentable.” So, at the end of the first week in June, he sprayed Roundup and went to work. He cut the Riviera in at two to three pounds per 1000 square feet. Kelley applied 8-10 pounds N at seeding and made two applications of MSMA for crabgrass. By August 15, the field welcomed its first scrimmage.

He waited about four weeks after planting before applying the MSMA. “I wanted to get a couple of mowings on it,” he says. Bermuda will get tip burning at a more aggressive rate, but it was important to knock out the crabgrass.

It's not all easy street, however. Bermuda-grass goes off-color if it is not

overseeded with rye. The superintendent at Polytech wants the fields green, so they get overseeded.

It also requires more mowing to maintain a bermudagrass field. Kelley uses three applications of Primo at 20 ounces to slow the growth. Still he mows the fields two or three times weekly. “Otherwise, it would be daily mowing,” he says. He cuts to three-quarters of an inch. But he loves the 8-10 inch deep roots. “There's no sheering of the turf when the athletes make their cuts,” he says. ■

Chris Harrison is a veteran freelance writer on turf and related subjects.

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