

 DIVERSE GEOSYNTHETICS

STABILIZING STEEP SLOPES AFTER A FLOOD

Erosion Control

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ASSOCIATION

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Hydroseeding Solutions



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**Erosion Control in
Oil Shale Country**

**Restoring a Vital
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FEATURES

- 16 Stabilizing With Seed**
Contractors restore sites, from towpaths to highways.
By Margaret Buranen
- 24 From Rooftop to Pavement**
Diverse geosynthetic products make many jobs easier.
By Steve Goldberg
- 32 Getting the Upper Hand on Sediment**
Specialized products solve a range of construction-site challenges.
By Linda Robinson
- 39 A Promethean Task**
Oil shale country has its own set of erosion control problems.
By David C. Richardson



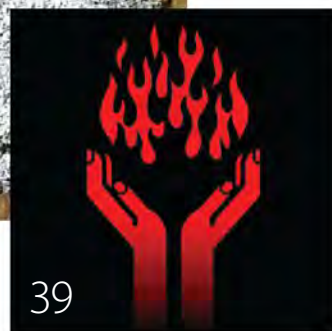
DEPARTMENTS

- 6 Editor's Comments**
- 10 IECA News**
- 44 Project Profile:**
Restoring a Vital Connection
- 46 ShowCase**
- 50 Project Profile: Stabilizing Steep Slopes After a Flood**
- 53 Spotlight**
- 56 MarketPlace/Ad Index**
- 58 Reader Profile**

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Stabilizing With Seed

Contractors restore sites from towpaths to highways.

BY MARGARET BURANEN

As the following projects show, hydroseeding work varies tremendously. A project might take place in a residential yard or extend for hundreds of acres. It might be along a road where drivers barely notice it, or it might add to the beauty of a natural area that thousands of visitors appreciate each year.

Mission Reach

Mission Reach Ecosystem Restoration and Recreation Project is a \$245 million effort taking place along 8 miles of the southern portion of the San Antonio River in San Antonio, TX. The famous River Walk runs along a northern section of the same river. Mission Reach is also a tourist attraction, but different from the River Walk's older

urban retail, restaurant, and entertainment zone.

The focus of Mission Reach is on restoring the environment and providing a setting for outdoor recreation. Fifteen miles of bike and walking trails, park benches, and shade shelters draw people into the outdoors. Historical markers explain the significance of the four missions built here.



A truck-mounted seeder covers a broad zone of the landscape.

Trees—some 20,000 of them—and other vegetation have restored the habitat for wildlife. Through the process of fluvial geomorphology, the straightened river has been transformed to replicate its original flow.

Zachry Contractors of San Antonio served as general contractor and assigned the hydroseeding to Wayne Woodward, the head of TeRo Enterprises also of San Antonio.

TeRo's work on the project occurred from October 2012 to March 2013. "We did just under 200 acres," says Woodward.

He relied on two different Finn HydroSeeders to perform the erosion control work. "The T-120 Gooseneck is

my favorite one. It's the most versatile," he says.

He says of the larger T-330 Titan, "The big machine spoils you because you don't have to mix ingredients. You can go a lot farther and can do a lot more because it holds three times as much."

He notes, "The Finn people were most impressed because we did a lot of long-range work. We did several areas that required 1,200 feet of hose. We always ran six or so people on the machines. Pulling hoses, at times we had 20. Dragging that much hose is a pure nightmare," Woodward adds.

He describes the area's soil as "south Texas gumbo, a black soil." As for the



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slopes, “most of it was 3:1. Some of it was 2:1. Very little was 1:1.”

No soil amendment was used. Mulching and irrigation were already done before TeRo started the hydroseeding portion of the project.

The seed used was native to that area of Texas. The general contractor chose it and did not want any cover crop included.

The short grass mix included such grasses as buffalo grass and, green sprangletop and wildflowers, including Texas bluebonnet and Indian blanket. Another seed mixture used was similar and also included blackland prairie mix, sideoats grama, butterfly retreat, American basket flower, and Illinois bundleflower.

Woodward’s crews added water-soluble fertilizer and 3,500 to 4,000 pounds of Flexterra, applied extra

heavy. “Most of it took two different applications in different directions,” he says.

“I use a lot of Flexterra. I stay with higher-end products and stick with bonded fiber matrix. I don’t use



A hydroseeding crew lays it on thick.

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blankets or rolled fibers unless I have to. I stick with hydraulically applied materials. It saves time, and I get better results," he explains.

The weather during the project brought some challenges. "It washed out a couple of times. We reseeded a second time. We had a 14-inch rain at the end of the job. For the third reseeding we were able to just patch up areas," says Woodward.

Accessibility posed another challenge. "At first the area was wide open; we could drive on it. Then the bike trails and sidewalks and small trails were built. They are all crooked, S-curved, just big enough for a golf cart," Woodward adds.

Getting water to the site was also difficult at times. "At first we could pump river water, but as the work progressed, we couldn't use that anymore. We couldn't turn around—we had to back out."

Woodward says that Mission Reach is now "a hot spot," a popular place with residents and a place tourists want to visit. He is proud to have worked on such a beautiful asset to the community.

Greening the Yard

Another Texas hydroseeding contractor, Chad Hardy of Hardy Trees in Lubbock, has been in the landscaping business for 17 years. His company does all phases of landscaping, including designing, planting, hydroseeding, and maintenance, and also operates a large plant nursery.

"We're the second largest in this region. We do a lot of work in higher

end subdivisions," Hardy says.

As an experiment, Hardy hydroseeded a 1-acre lot in an upscale subdivision. He used his firm's own proprietary fertilizer, but not the Bermuda grass seed he recommends for the area. That was because the homeowner insisted on having Zoysia grass. Hardy says Zoysia does not do well in the Lubbock area.

In a few months the homeowner called Hardy and said, "Our front yard looks bad. The seeds are taking forever

to germinate. The back yard looks like a golf green. What did you do there?"

Hardy checked the property. "The backyard looked one thousand times better than the front. The only thing we did differently was to put Hydretain on the back yard. And we watered half of what we watered in the front yard to get it established."

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from air within the soil and transfers that moisture to the roots of plants. It reduces the cost of labor and water for irrigation. It also helps plants use more water from irrigation or rain.

Hardy is sold on the product, "very much so because we are in such a bad drought here. We are so convinced that it does not matter what the job is, we put Hydretain in it."

He adds, "I'm starting to use it in flower beds and in our nursery flowers, down to 4-inch flats. Every person who comes to our nursery says our plants are the best in Lubbock."

Trees are a major part of sales at the nursery. "Red oak is our big seller. Then we see a lot of live oak, burr oak, cedar, elm, and Chinese pistache, a hybrid," Hardy says.

Since he and his staff have been adding Hydretain to them, "The trees from our nursery are huge. They look like they've been in the ground for years."

**"I'm a believer
that Murphy's
Law exists on
this landfill.**

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can be helpful,
or it can keep
the straw from
getting where you
need it to be."**

He acknowledges that the product is somewhat expensive, but Hardy believes that "it will pay for itself in six months, just by saving on city water or electricity for a well to run."

His company does a lot of big jobs for the Texas Department of Transportation (TXDOT). Hardy says that even on these jobs Hydretain pays for itself. "For erosion control you've got to have roots take hold and moisture to get plants grown. This product will cut that [amount of water] in half."

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Delaware Canal State Park

The towpath of the Delaware Canal State Park runs parallel to the Delaware River and the Delaware Canal between Easton and Bristol in Pennsylvania. This path, where mules once walked to pull canal barges, is now a walking, running, and biking trail for people, part of a scenic recreational site in the midst of an area rich in history.

To prevent erosion of the canal towpath's banks and to keep the area looking green and attractive, the state of Pennsylvania contracted with Ken Chwal Hydroseeding of Pipersville, PA, to hydroseed the banks. Chwal and his crew hydroseeded and mulched about 7 acres during the fall of 2013 and spring of this year.

Gaining access was the most challenging part of the project. "The towpath was barely wide enough for the truck, with the river on one side and the canal on the other side," Chwal explains. "We had to back up a mile to a mile and a half to get to where we needed to be."

While the water wasn't deep on either side, the banks were steep, with a 2:1 slope. Worse, they dropped 15 or 16 feet down from the narrow path.

Chwal used ProMatrix for the mulching, along with fertilizer and lime. The seed mixture included wildflowers, prairie grass, and annual rye as a cover crop.

Chwal used an Epic C220 hydroseeding machine and was pleased with the way it worked. "I just put it into service and I'm very happy with it," he says.

Weather was a problem during the work. "We had heavy rain this spring the day after we sprayed," Chwal recalls. "We had to reshoot a couple of times."

Chwal grew up in a landscaping family. "In 1984, I decided to go out on my own and do hydroseeding. Nobody was doing it in my area," he says. Since then he has worked on many different types of sites and enjoys the variety of hydroseeding projects.

West Central Landfill

"We hydroseed in the fall, as needed, to prepare for the winter season. We solve all of our erosion control efforts before winter hits because the rest of the year is dry," says Andy Clemens, supervisor of the West Central Landfill, which is operated by the City of Redding, CA.

Clemens pays close attention to weather forecasts. "We try to read the weather so we don't put the seed down too early. We try to seed within a two-week period of an incoming storm so it

will get some moisture, but if the storm misses us, we will disperse water with our water truck," he explains.

Clemens and his employees use a Finn HydroSeeder model LF-120 to get the landfill ready for the winter ahead. It holds about 1,500 gallons of water, and they will use two or three loads a day. That adds up to 20 to 30 loads over a two- to three-week period, to cover about 3 to 6 acres.

"We can do half an acre on a tank," says Clemens, adding that the machine

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is “very, very productive and it’s low maintenance. With the dual axles and big balloon tires, it has good stabilization. We also use a Finn strawblower.”

The seed mixture used is a pasture mix of clover, grasses, annual rye grass for quick cover, and other seeds. Soil at the landfill is mostly clay, with a lot of rock.

Clemens says that the biggest challenge of hydroseeding the landfill each year is “juggling it in with a lot of other work. We’re still receiving 500 tons of garbage a day and our first priority is daily needs. I have to make sure I have a window of time for the hydroseeding.”

The hydroseeding is a three-stage process. First is spraying the mixture of seed, water, and fertilizer (16-20-0). Next is blowing straw over the area. Then the workers use the Finn again to spray a binder to hold the straw in place.

“I’m a believer that Murphy’s Law exists on this landfill,” says Clemens. “Wind blowing can be helpful, or it can keep the straw from getting where you need it to be.”

He has noticed that because his employees don’t do hydroseeding for most of the year, “it takes a while to get a rhythm down, but once we do it becomes easier.”

In 2013, a major fire broke out at the West Central Landfill on a very windy day. “That’s the downside of using grass



When finished, the Mission Reach project will have restored the environment and will provide a setting for recreation.

for erosion control. It can create a potential fire hazard. It’s a Catch-22,” Clemens explains.

The fire lasted for six hours. It also burned the landfill’s methane gas extraction pipe. **EC**

Margaret Buranen writes from Lexington, KY, on the environment and business for several national publications.

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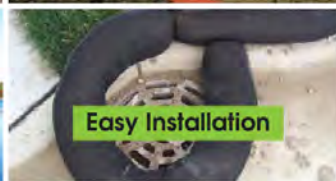
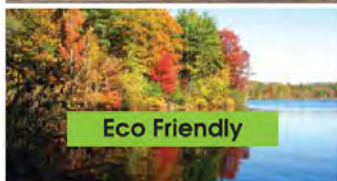
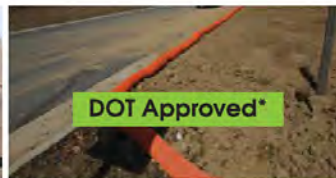
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Spotlight



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