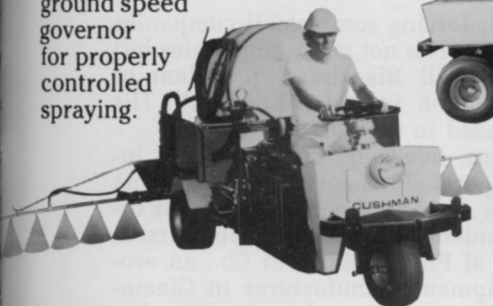


3. SPRAYER.

It's a 100-gallon polyethylene tank that holds liquids for spraying greens, trees, bushes or roughs quickly and accurately. Team it with the Turf-Truckster equipped with a standard 2 to 1 auxiliary transmission, optional PTO and ground speed governor for properly controlled spraying.



4. TOP DRESSER.

Compared to self-powered or walk-type top dressers, this unit pays for itself in the hours it can save your crew. A rubber fabric moving bed and rotating brush are regulated by



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5. SPREADER/SEEDER.

Mounted on the optional Short Box or Flatbed/Box, its cyclone action spreads up to 300 pounds of seed, sand, salt or fertilizer over areas up to 40' wide. The Spreader/Seeder is powered by the Turf-Truckster's optional PTO with extension shaft. And since all controls are operated from the driver's seat, one man can get the job done.



6. QUICK AERATOR.

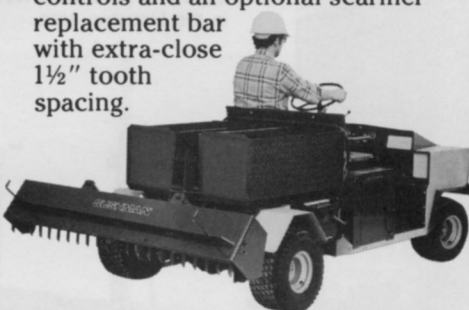
We call it the Quick Aerator because its 46" wide swath lets you finish big aerating jobs fast. It can also move from job to job fast, because it can be



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RECLAMATION CONTRACTORS STRUGGLE TO SURVIVE DELAY IN OSM BUSINESS

by Scott Scredon

When Congress passed the Surface Mining and Reclamation Act two years ago, one of the prime beneficiaries of the law appeared to be land reclamation contractors. The new legislation required coal companies in the U.S. to meet much stricter environmental standards than those previously imposed by individual states, and the lack of expertise at small and medium-sized companies seemingly promised opportunities for revegetation firms.

Though some firms have received additional work as a by-product, the new law has not yet generated the large amount of work that the contractors expected. In fact, some reclamation firms have suffered financially since the new law's regulations have significantly raised the cost of

Appalachian coal, forcing some small companies out of business. "There's not many companies left around," says Randall Blackburn, president of Coalfields Reclamation in Betsy Lane, KY. His sales have decreased in the past two years.

There are signs, however, that mining is increasing in other parts of the country, and in some instances, so is the amount of reclamation work offered to independent contractors. Bob Person, general manager of Finn Equipment Co., an erosion control equipment manufacturer in Cincinnati, said sales of his equipment have increased in recent months due to new mining in Oklahoma, Arkansas, Missouri and Illinois.

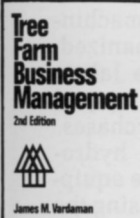
The federal government's program to reclaim abandoned mines, those lands mined before any



Flood control projects are a specialty of American Hydrograss Inc., of Houston, TX. Workmen hydraulically mulch flood control levees at a Du Pont Chemical plant (left) and at the Houston Lighting and Power Co. American Hydrograss owner John Thomas has established 15 experimental plots to test different grasses on flood-prone land in the Houston area.



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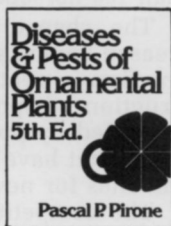
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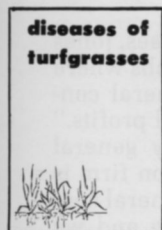
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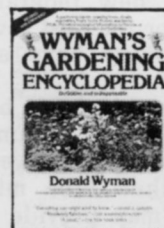
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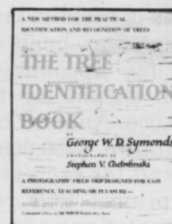
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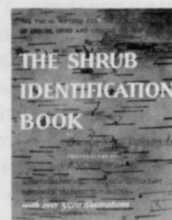
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Heavy duty rig enables The Grass Man of Marietta, GA, to seed mountainous, hard-to-reach areas.

states required reclamation, has also not proved fruitful up to this point. The U.S. Office of Surface Mining (OSM) the agency charged with administering the new federal law, has been funding projects for the past several months. But few of these projects have actually required substantial revegetation.

Though this program may become the backbone of employment for reclamation contractors within the next couple of years (it calls for spending more than \$100 million annually), another program may provide more immediate benefits. The Rural Abandoned Mine Program (RAMP), administered by the U.S. Soil Conservation Service, intends to reclaim land on rural sites.

About \$10 million has been appropriated for these projects for the upcoming year. Contracts have already been signed for three projects in Texas totaling \$167,000. Another contract, signed in Kentucky, will allocate \$450,000 to a non-profit group to reclaim land for recreation use, and SCS officials say the project will require extensive regrading and revegetation.

Otherwise, contractors will need to continue to develop their existing markets. Though many contractors feel the potential business in these areas does not mean expansion, there may not be a drop in such projects, either. The Washington Department of Transportation, for instance, plans to award contracts to provide erosion control on about 600 acres and spend another \$2.5 million in landscaping during the coming year.

The most successful reclamation contractors, however, have relied on innovative business and marketing ideas to increase their sales during the past couple of years.

Owen Jones, president and general manager for Contract Grass Co., Inc., Marietta, Ga., said the company's owner decided about one year ago to pursue jobs that require large equipment and more land, thereby generating higher profits, than the smaller jobs they had previously bid on.

Jones said the company was experiencing stiff competition from smaller firms and farmers who would undercut their bids by as much as 50 per-

cent. The firm also decided that it must fight price increases by improving its own productivity. "The only way we could do that was with better machinery," Jones says. "I decided we'd be mechanized, while other reclamation contractors were labor-intensive." He claims that productivity has jumped 300 percent because of these equipment purchases.

The firm increased the number of hydro-seeders from one to three and transports the equipment over longer distances, thereby increasing the number of jobs it could bid on. A second straw-mulcher was added and other tractors with more than 100 horsepower replaced smaller ones.

The change in business philosophy has increased annual sales to about \$700,000, Jones says. The firm is treating land disturbed by airport construction, disposal areas for waste materials generated by power plants, federal building programs that have expanded waterways and canals, and sites for new railroad construction.

The competition has dropped because not as many firms can handle the more complex problems of these jobs. "These projects have large acreage, rough terrain and hilly country. Every project has cuts and fills," Jones says.

Along with the new equipment purchases, Jones says the company decided not to bid on jobs where the firm would sub-contract from a general contractor or take a job that offers "marginal profits."

Jones opposes those jobs offered by general contractors since he feels the revegetation firm is financing the general contractor. "The general contractor usually gets a front-end advance and we don't get paid until 30-60 days after the job is done. We're financing him and we don't think he does anything for us in return," Jones admits that the philosophy has occasionally been costly. "We lost some big jobs over that."

But the larger jobs, those that provide handsome profits, allow the firm to make certain it can provide more than adequate revegetation results. "We've never had a problem delivering a final, good grassing job," Jones says.

The new kinds of equipment have enabled the firm to pursue jobs that involve more than just planting grass. One project covering several hundred acres will require planting 70,000 shrub and tree seedlings for wildlife cover though Jones must guarantee a 70 percent survival rate. "We do have specialists working for us who have done that kind of work," he says.

Mine reclamation work also interests Jones, and he initiated a meeting last month with officials at one Alabama mine to convince them he should do their reclamation work.

Jones feels his firm can do the work for less money than the mine company. The key factor, however, is getting enough work to keep his machines busy. He figures that at least 1,000 acres per year would be necessary to pay off an additional investment of between \$200,000 and \$300,000 for new equipment needed for the mined land.

Bulldozers and harrows are necessary, Jones says, to perform seedbed preparation at the mines. "The soil is so tough, you can't use rubber tires. Un-

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til the firm achieves the 1,000-acre goal, Jones will sub-contract work where they need heavy equipment. He is not pleased that the new federal law requires reclamation immediately following mining, since he has to make more trips to the mines just to restore 10 to 15 acres.

While Jones and some other reclamation contractors see surface mine reclamation as the new frontier, contractors in Appalachia, who have earned their living for the past several years from greening the mines, are looking for ways to cut costs on these jobs and expand into other markets.

Ken Faerber (pronounced Fay-ber), president of The Green Mountain Co., Charleston, W. Va., reclaims more than 15 underground mines and is also looking into other non-traditional kinds of reclamation.

Reclamation inspectors from the Office of Surface Mining have issued violation notices to underground mine operators for failure to obey regulations on haul roads, drainage and other areas, Faerber said. So he has tried to construct drain pipes and perform more grading and excavation in order to help them meet the federal government's rules.

The U.S. Environmental Protection Agency is also gearing up to monitor the disposal of "hazardous wastes," the by-products of chemicals and other materials that can pollute water sources. Faerber says this will require the contractor to sample the overburden at the disposal site, perform leachate tests and insure the quality of ground water. This kind of work may begin to form a new kind of reclamation contractor, Faerber feels.

"We just can't look at reclamation as going out there and putting down grass. That's just an after fact."

Faerber still does plenty of work on surface coal mines, but is using different methods to apply seed and mulch to keep that part of his business lucrative. He often seeds mines by helicopter when the disturbed land is more than 50 acres, saying it is cheaper for the coal operator than if seed is applied with a hydroseeder. This includes a re-fertilization program to aid germination since the seed is dropped onto land void of nutrients. Costs of application of seed by helicopter vary. Applying seed without any mulch is the least expensive method, and adding a latex mulch is the most costly.

Faerber recommends the use of liquid latex mulches, saying they aid germination on "critical" areas. He says it is not "cost-competitive with wood fiber mulch until the contractor needs to apply between 1,000 to 2,000 pounds per acre of wood fiber.

Handling the liquid latex mulch is also a problem, since the liquid is delivered only in five-gallon and 55-gallon barrels. The latter size is "kind of hard to get on top of a hydroseeder," he quips. Yet it will "stick to darn near anything" and helps establish grass during the initial application.

A third contractor has also found a way to analyze another kind of spoiled land and turn its restoration into a profitable business.

John Thomas, owner of American Hydrograss Inc., Houston, Tex., forged into the reclamation business by approaching oil refineries and petrochemical plants with the idea of growing grass on their land.

Besides selling companies such as Exxon, Gulf Oil and Diamond Shamrock on the aesthetic appearance of a reclaimed area, Thomas showed them that it is cheaper than paying for cement or other construction materials. But growing vegetation on these sites actually involves reclaiming them, and has presented problems.

"Our biggest problem is the soil structure," Thomas says. "A lot of the sites where the plants now stand used to be dumping grounds for certain kinds of chemicals.

"There's also a tremendous salt problem in some areas. The high concentration has meant possibly going with another kind of seed in some situations."

Thomas said soil samples are taken at each site to determine salt content and other factors. Occasionally, new topsoil must be hauled in to give seed a growing medium, and there have even been sites where the soils won't support plant growth.

Direct contracts with the oil companies for these jobs, which usually cover between 2-10 acres, have increased his company's sales "substantially" during the past year, he says.

Though his competition has increased about five percent during the past year, Thomas is also working as a consultant to some of these firms, even when they win a contract he would have liked.

Thomas feels the smaller firms might overlook some details about performing a job. "Though the area where the job is might have a water source, it may need to be sampled because it's not salt-free. This has happened a number of times." Thomas is also a supplier of seed, fertilizer and wood fiber mulches.

Though Tony Haley, an equipment specialist for Caterpillar Tractor Co., Peoria, Ill., has predicted that mining in Texas will experience the biggest immediate jump in mining (from 19 million tons in 1978 to a projected 50 million next year), Thomas says he doesn't foresee a move into mine reclamation.

"The distance of the mine fields puts us pretty well away from mining," he says. "There are conditions here that require us to stay put." He says he often can sign a contract "overnight," especially if a hurricane or other bad weather is expected, and the site needs to be seeded immediately.

Thomas worked to establish his business in the local area. He became involved in another kind of revegetation after attempts by some government officials to place revegetation standards on new housing construction became imminent.

Heavy rains eroded property from new homes on Houston's west side last summer, and many residents blamed the city for failing to maintain a 40-foot parcel of flood control ditches.

After talking with some of the home builders, Thomas established 15 experimental plots to test different grasses on the flood-prone land. Though the Harris County Flood Control District has delayed the approval of a revegetation plan thus far, primarily because of recent changes in its administrative structure, Thomas feels a plan will soon be adopted.

If some specifications for revegetation are approved, Thomas feels his work with the developers will give him the first chance at this new business.

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CONTRACTORS DESCRIBE PROJECTS CHOSEN AS 1979 AWARD WINNERS

by Bruce F. Shank, Editor



The Martin-Marietta Corp. Headquarters

An award winning landscape project demonstrates the skilled combination of natural beauty, functional efficiency, and personal comfort. In 1979, regional and national groups selected and recognized more than 100 successful landscape projects in the United States. Seven award winning contractors have agreed to share their project reports with us. They offer a variety of solutions to regional and topographical conditions in the design and construction of a professional landscape.

These projects offer tips on how to take an existing area, to identify problem elements, and to arrive at a controlled, yet balanced, environment for plants, structures, and people. We encourage you to keep this issue for future reference and to participate in design/build contests in 1980.



Chapel Valley Nursery Co., Woodbine, MD

Project: Martin-Marietta Headquarters

Landscape Architect: Andrew Balderson, of Donovan, Feola, Balderson & Associates, Inc., Silver Spring, MD.

This project has received four awards during the last three years for different phases of construction. The 1979 award was a Certificate of Merit from the American Nurserymen's Association. In 1978 it received a merit award from the Associated Landscape Contractors of America. In 1977, it clinched the Grand Award from the Landscape Contractors Association of Metropolitan Washington and the Contractor Award from the Maryland Chapter of the American Society of Landscape Architects.

The Martin-Marietta Corporation Headquarters Building was designed to reflect the high standards of the corporation. The location, site development and building design were intended to produce the best environment possible.

In order to achieve this high standard, the owner demanded that all facets of the project be carried out with the highest quality of materials and workmanship. To that end, the owner worked closely with the architects and contractors in overseeing that all stages of project development were implemented and completed in a proper and professional manner.

The project landscaping proceeded in two phases: exterior planting and interior courtyard planting.

The exterior planting included a complete irrigation system, 4 inches of topsoil over site, bermed areas, fine grading, seeding and sodding, large and varied planting areas, walks and a paved plaza entrance area.

Changes and corrections to original rough grading were necessary to create the proper berms for the planting and lawn areas. These berms provide a rolling effect to the exterior planting areas.

Owner dissatisfaction with particular plants was resolved by consulting with the architect on substitute tree varieties to achieve the desired effect.

The plants were selected in size, groupings and color to contrast and complement the building as well as to provide a tranquil and pleasant area for both employees and visitors.

In order to heighten this effect, a screening of sixty White Pines was planted to both cut off the view and lower the noise level from a major highway, Route 495. All sides of the building were landscaped to provide a picturesque setting either viewing the area from the perimeter roadways or looking out from the building over the site. A canopy of Kwanzan Cherry trees, as suggested by the landscape contractor, surrounds the employee cafeteria adding seasonal interest to an important gathering place. A manmade pond was created with walks and sitting areas to enhance the overall impact.



View from entrance of Martin-Marietta headquarters.

The three interior courtyards, North, South and Central, required individual irrigation systems, intricate site grading, special planting mixtures, numerous large and small plants and decorative paving.

The North Courtyard posed a particular challenge to the landscape crew's ingenuity. The North Courtyard is located 15 feet above grade on the top of a parking garage. After analyzing the situation, it was determined that access to this area was limited to a four by four foot trap door located in the floor of the courtyard. Plant material was lifted through the trap door either by hand if light or by tripod and chain hoist if heavy. Because of weight constraints, a special soil mix was used consisting of one-third perlite and two-thirds topsoil for this area. In order to bring in the necessary 500 cubic yards of special planting mix, an 80 foot long conveyor was set up to bring materials from outside the building, through the building and into the courtyard.

The Central Courtyard required twenty-five 12 foot wide, hexagon brick units held together by steel edging. After a discussion between the shop manager and landscape foreman, it was decided to make the twenty-five, preformed, welded metal edged shapes at the shop and then take them to the job site. This courtyard, which is overlooked by the visitor waiting area, provides a colorful and seasonal vista for all interior employee offices.

Again, access was a problem in planting the South Courtyard. But, utilizing the experience gained in competing the North and Central Courtyards, the crews were able to complete this courtyard planting without any additional difficulty.

The desired environmental effect of quality and tranquillity was achieved through owner involvement, designer capability and landscaping excellence.



The Port Ludlow Recreational Complex



Six acres of groundcover make the Port Ludlow maintenance job especially challenging.

Evergreen Services Corp., Bellevue, WA

Project: Port Ludlow Recreational Complex
Landscape Architect: Glen Hunt & Associates, Seattle, WA

The Port Ludlow project won a merit award for landscape maintenance from ALCA in 1979. Even though termed a maintenance project, in fact it is more an overhaul to a major landscape project which had been previously maintained by personnel of the developer. Rod Bailey, president of Evergreen Services, says the big challenge was developing a site management program for a site already worthy of recognition. Bailey credits Robert Rooney and Mike Emel for their work on this project.

The Port Ludlow project was developed and planted in 1969-1971 and was initially maintained by developer personnel. Evergreen received the maintenance contract in 1973 and began a five-year program to upgrade the landscape. Available budget was low and placed a strong emphasis on labor, equipment, and chemical productivity.

The 26 acres of landscaping posed significant challenges. There was no irrigation, topsoil was thin and the landscaping was sparse and weedy. The project is physically remote from Evergreen's Bellevue offices and is located in a commercially undeveloped area.

The prioritization of the program was to upgrade the site while maintaining, watering during restricted periods, working with special events and weekend traffic, and working with different groups of owners to establish and affect common objectives.

There are six important factors which influence maintenance practices:

- A moist, salt water marine climate
- Extensive areas of groundcover plantings (6.4 acres).
- Extensive turf areas from rough (12 acres) to fine mow (7.3 acres).
- Native areas surround the grounds and transitions are important.
- Heavy public use of the facilities.
- Three different customers involved in budgeting and contracting although project is handled as single unit.

