August
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Why So Many Differences?

NOWRA explores the feasibility of regional codes to make system requirements more uniform and less confusing from county to county and state to state

By Ted J. Rulseh

Picture this: Two homesites on opposite sides of a river that forms a state border. The proposed homes are about the same size with the same number of bedrooms. Soil and site conditions are nearly equivalent.

And yet, for the purpose of onsite system design and installation, the sites are very different. The two states define "bedroom" in different terms. Daily flow requirements are not the same. Neither are required setback distances. A brand of treatment unit that is allowed on one side of the river is not permitted on the other. And so on.

It's actually not necessary to imagine this scenario: It exists all over the country. Onsite regulations can differ significantly, not just across state borders but across a highway that separates two counties.

Why should this be? Why should onsite regulations be based on political divisions instead of pure science? The National Onsite Wastewater Recycling Association (NOWRA) is asking those questions as a committee of members explores the feasibility of a Midwest Regional Code for onsite systems that would cut across state boundaries.

Seems like common sense

The regional code concept was the subject of a special forum on April 9 as part of the 2009 NOWRA Technical Education Conference in Milwaukee, Wis. A roundtable of industry experts looked at the issue from a variety of angles.

NOWRA's reasoning is simple: Regulatory programs have the identical goals of protecting human health and water quality. And the disparity between state onsite rules in the Upper Midwest seems greater than the science would justify.

Differences in the codes burden designers, installers and treatment equipment manufacturers, with little or no apparent benefit to homeowners or the public. Onsite professionals who work across borders have to attend repetitive training events and take multiple exams.

Differences in the codes burden designers, installers and treatment equipment manufacturers, with little or no apparent benefit to homeowners or the public. Onsite professionals who work across borders have to attend repetitive training events and take multiple exams.

Individual state approvals of new products and models make it harder for the manufacturers to be successful and slow the adoption of better equipment and more effective treatment technologies. NOWRA asks: Why should a homeowner be denied a better system based solely on the jurisdiction where he or she lives?

The NOWRA roundtable examined all these concerns and explored whether it would be feasible or practical for Midwest states to collaborate on a common code for onsite and cluster systems. Participants were:

- Michael Corry, past chair, NOWRA Model Code Committee, Madison, Wis.
- Tony Smithson, chair, Model Code Committee, and director of environmental health services in Lake County, Ill.
- Roman Kaminski, Privately Owned Wastewater Treatment Systems program manager, Wisconsin Department of Commerce.
- Mark Wespetal, Wastewater State Revolving Fund and Water Policy, Minnesota Pollution Control Agency.
- Daniel Olson, senior environmental specialist, onsite wastewater, Iowa Department of Natural Resources.
- Mark Wieser, Wieser Concrete, Maiden Rock, Wis.
- Brian McQuestion, Hoot Systems, Wauwatosa, Wis.
- Dick Otis, wastewater engineer and roundtable moderator, Madison, Wis.

The critical question

Perhaps the thorniest question the group dealt with was: *What are the barriers to collaborating on technical requirements, licensing programs, and product approvals between states, and how can these barriers be overcome?*

The biggest and perhaps most obvious barrier is the autonomy of the state regulatory agencies. Let's face it: Government agencies like to do things their own way. Getting agencies from, say, half a dozen Midwest states to agree on one set of regulations would be tricky at best.

Perhaps the good news is that it's hard to envision many other substantial barriers. Logistics, procedures, coordination, yes, but in all those cases, where there's a will there's a way. Cost? That's a barrier in the development phase, but a regional code could well save money down the line.

So let's leave aside the really tough question — whether representatives from the states can set aside pride of authorship — and look at the reasons to make an effort toward a regional code. Here are insights from some roundtable participants:

Smithson observed, "Everything we (regulators) do discourages innovation." He said his state's rules do not serve the public well and referred to an evaluation he performed that showed $7 million per year in unnecessary costs to homeowners to build excess capacity into their systems to meet inflated design flows based on bedrooms.

Wespetal stated that Minnesota is sensitive to local control and treats the state code as the "people's

code." He said past practices persist because of practitioners who believe that "what worked before should work now."

Kaminski observed that onsite technologies are advancing just as state programs are downsizing in the face of reduced budgets. Though change is difficult and takes time, he said now is an opportune time to develop a regional program.

McQuestion noted that technologies are improving rapidly and the rules are not keeping up. He sees distrust of manufacturers by the regulatory community as impeding approvals. In his view, a regional approval process would save time and reduce cost.

Wieser said his company ships tanks across many state and county borders and must deal with different standards. The status quo limits value-added features and services because strict, prescriptive rules discourage innovation. He believes a universal quality-assurance program would overcome that problem.

Taking the next steps

The roundtable ended with an action plan for what NOWRA could do to encourage regional codes. The group agreed to start small and to target product approval protocols first, since that is an area where states and counties would find it easiest to consider regionalizing. The group aims to develop an acceptable product approval process by the end of 2010.

If you want to follow this initiative or take part it in, or if you have comments or questions, you can contact Dick Otis at think@nowra.org. In the meantime, you can get regular updates through the NOWRA *e-News*.

Onsite Installer in interested in comments on this issue from industry professionals. Please share your ideas by contacting me at editor@onsiteinstaller.com. We'll publish interesting comments as space permits. ■

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The team from A Advanced Septic Services: from left, Bruno Sommer, Adam Jewell, Douglas Hyland, Jeremiah Gunia, Brad Anderson, owner Andrew Gunia, Joshua Gunia, Michelle Gunia, Joe Bell, and Pam Woodard. (Photography by Russ Carmack)

Step by Step

A Advanced Septic Services uses sequential installation methods to build systems on challenging sites while reducing impact on the property

By Gil Longwell

A Advanced Septic Services Inc., Puyallup, Wash.

OWNERS: Andrew and Josh Gunia and Gary Monnett

YEARS IN BUSINESS: 2

MARKET AREA: 60-mile radius

ANNUAL REVENUE: $1.2 million

SPECIALTY: Overcoming restrictive site conditions

EMPLOYEES: 10

AFFILIATIONS: NOWRA, Washington Onsite Sewage Association

WEB SITE: www.aadvancedservices.com

Andrew Gunia knows the answer will almost always be: Yes. He knows it even before the phone rings at his company, A Advanced Septic Services Inc., and he hears the start of the question: Does your company ...

Faced with a tough economy, a changing business mix and a commitment to keep his employees on as close to a full-time work schedule as possible, Gunia sees an opportunity in every call. "The first question we ask ourselves is: How will we do it?" says Gunia, who started the company in 2007.

A Advanced Septic, based in Puyallup, Wash., thrives on installing systems on challenging sites, where space is limited or where soils and topography create constraints. To deal with such sites, Gunia uses an approach he calls sequential installation — a method of building the system in a logical way that minimizes impact on the property.

Valuable assets

A Advanced Septic installs, services, maintains and repairs all types of onsite systems. "Twelve months ago, our work load was 80 percent new installation and 20 percent repair," says Gunia. "Now it is 10 percent new installation and 90 percent repair."

The company has expanded its service menu to include general excavation, land clearing, and other tasks that Gunia's equipment and skilled workers can handle with little or no additional training.

Gunia's daughter-in-law, Michelle, in her role as office manager, determines the skills needed to address each caller's concerns and evaluates the immediacy of the need. She then routes the call to the appropriate person in the company.

Gunia has been in the onsite industry since 1984. Starting out as a vacuum truck operator, he moved through the ranks of a large and diversified onsite services company.

> **"People are digging in and fixing what they have rather than choosing to move to a new home or replace what they have."**
>
> **Andrew Gunia**

His life-long desire to be an entrepreneur guided his early years in the industry, when he broadened his knowledge and sharpened his skills in all areas.

Change in the climate

Today, the nature of the onsite business in his area has changed. "People are digging in and fixing what they have rather than choosing to move to a new home or replace what they have," Gunia says. The crews previously assigned to new construction are idle, and Gunia feels an urgency to keep them busy.

"Our work and our workforce are specialized; every employee is a valuable asset," he says. "The cost of laying an employee off is far greater than the cost of unemployment compensation, and there is no assurance that when work resumes, the laid-off employee will be available to re-employ."

Add to this the personal relationships and the decisions about layoffs are extremely difficult. It is easy to see why Gunia does all he can to keep people working.

Serving a three-county area, the company works mainly within a 60-mile radius of the office. Gunia invests about $4,000 per year in license costs in one county alone. The county licenses the business itself, the individual vacuum truck operators, the installation business, and system installers. Operations and maintenance technicians and maintenance specialists are also licensed, and each license comes with basic and continuing education requirements.

Gunia willingly invests in licenses for his people. He also believes in paying them well, keeping them properly trained, making sure they have professional-looking outfits to wear, and ensuring that they understand and reflect the company's values. Retirement, medical benefits and paid vacation all fit into the company's compensation plan.

People business

Gunia does not believe in excessive emphasis on volume production. In the 1980s, as a crew chief, Gunia directed installation of as many as three complete systems a day. Today, he still gets called back to repair systems he helped install years ago.

As a business owner, he now takes a different approach. "When my crew leaves a job, I never want to be called back," he says. "All of our efforts are directed to meet the customer's expectations."

Helping customers understand their needs and their solution options is Gunia's starting point for the relationship. "We are, first and foremost, in the people business," he says. "We show up with clean equipment. Each crew person is well-dressed. Everyone does their job in a professional manner."

Gunia learned a great deal about new installations while installing replacement systems on properties with limited maneuvering space and site constraints. Narrow access paths, fences, uncooperative neighbors, nearby buildings, and vegetation all present challenges that led Gunia to develop his sequential installation approach.

"When my crew leaves a job, I never want to be called back. All of our efforts are directed to meet the customer's expectations."

Andrew Gunia

Douglas Hyland (left) and Adam Jewell work on piping for the pump chamber of a DF60 Whitewater aerobic treatment unit.

Never Make It Look Easy

Andrew Gunia, co-owner of A Advanced Septic Services Inc., says most customers don't appreciate the behind-the-scenes work that precedes moving the first shovel of soil on an installation site. They may see a crew driving up in a clean, well-equipped truck, but they have no clue what it took to prepare and mobilize them or to prepare the truck itself.

Gunia says customer education should include a few words about proper licensing, the insurance the installer carries to protect workers and the customer's property, the value of a well-stocked service truck, and the continuing education each employee receives. All these items work to reduce the time spent on the property and the cost to the landowner, while also adding value to the installation.

Gunia sells customers competence, value, knowledge and skill, all delivered by his people and packaged in the completed system. "Having a smooth-running job should never look too easy," he says.

Co-owner Andrew Gunia and his crew use compact equipment and careful procedures to install advanced treatment systems on confined lots and in other challenging conditions.

Sequential installation usually begins at the most distant or most difficult-to-reach system component. The process sees the crew working its way out of the project. Space-conserving techniques also play a role.

"When we install a chamber system, we leave both ends of the chamber runs exposed," Gunia says. "But as the work advances, we backfill directly onto the already-placed chambers. This avoids the need for large stockpiles of excavated soil."

Sequential installations also enable sequential inspections. For example, inspectors can look through the entire chamber run to assure complete and proper placement and check grades.

Gunia (on mini-excavator) and team member Adam Jewell backfill an excavation after setting a Whitewater DF60 ATU into place.

Careful planning

On one project, the company had the entire site work contract, including all earth moving and system installation. Before moving a shovel of soil, Gunia and his crew analyzed the development plan and the architectural details of the house. The house was to have only 5-foot side yard setbacks, so all work in the backyard had to be done before the basement was excavated.

Precise elevation control was needed to ensure that the tank's inlet allowed gravity connection of the building sewer. Likewise, the tank's discharge elevation had to enable gravity flow to the absorption area. All these points had to be correlated to the elevation of the building sewer.

Elevation control for tank placement and final grade at the tanks and other buried features was critical. "We knew that if we missed and the tank was too high, it would be a manual job to make any adjustments after the basement was dug out," Gunia says.

He typically checks architectural plans to make sure that a deck or patio will not be built over the tanks he installs. He considers everything, even the location of sliding glass doors. "People do not want to step out back and onto a septic tank lid," he says.

A recent repair job required the use of a crane to lift a small tracked excavator over a 6-foot retaining wall. The crane was staged in a parking lot next door. Other challenges on the site included steep slopes, a backyard that ended at the edge of a body of water, and a narrow property.

A time to say no

Even with an "always say yes" attitude, Gunia knows when to say no. He was called about an installation for a brand new house where the only backyard access was through the 8-foot-wide side yards. The permitted design called for two oversized concrete septic tanks.

The drip system was located more than 150 feet farther down a steep slope near the rear property line. More than 140 cubic yards of sandy aggregate had to be delivered. Given those conditions, the builder's budget was $15,000 to $20,000 short, and Gunia was not willing to accept the risks. He politely declined.

All of Gunia's work is customer-driven. "We want to minimize site disturbance so the homeowner must deal with the least amount of site restoration," he says. One of his equipment trailers carries sheets of 5/8-inch plywood. They are deployed to create a pathway for the equipment, reducing damage to lawns. They also protect vegetation under soil stockpiles.

"We find that if they are in place for no more than two to three days, the impact on grass is minimal and the recovery swift," Gunia says. Homeowners count on Gunia to plan, anticipate site challenges, avoid problems and minimize site disturbance.

Right-sizing

Gunia's eldest son, Josh, a company co-owner, preplans all aspects of the work and prepares the sequencing schedule. Every equipment move is orchestrated. Suppliers must meet a precise materials delivery sequence. Material stockpile locations are defined and protected. If necessary, equipment may be positioned by a crane. The company's crews work hard to minimize the area subject to site disturbance.

In line with that, the company is consciously downsizing its equipment fleet. Smaller equipment, especially tracked equipment, has a lighter step and causes less soil compaction. It is also significantly less expensive to fuel and maintain and it is easier to maneuver on constrained jobsites.

When the company does not own the best piece of equipment for a job, it turns to a rental supplier. "We will not force-fit our equipment to a job. If rented equipment is the right way to go, we will go there."

"We will not force-fit our equipment to a job. If rented equipment is the right way to go, we will go there."

Andrew Gunia

Recent equipment acquisitions include a Terex Model TX 760 extended backhoe, the company's only wheeled, off-street vehicle. A Kubota U-15 mini-excavator and a 10,000-pound-capacity Kubota KX-121 are key machines. Both are small enough to be pulled by an International 18-cubic-foot dump truck or one of two new Dodge extended-cab pickups. "These big pickups give us versatility to fill an estimator and customer contact role in the morning and haul a big machine in the afternoon," says Gunia.

Supporting the septic tank pumping department is a vacuum truck with a 3,600-gallon aluminum tank on a Freightliner chassis. The company also regularly uses a Terralift soil fracturing machine.

Opening new markets

The company's skills inventory is being reviewed, too. As more advanced technologies become available, Gunia considers the advantages of each based on experience resolving existing problems and overcoming obstacles on new sites.

The Washington Onsite Sewage Association (WOSSA) presents a wide variety of training sessions that also help Gunia determine which technologies are worth adding to the company's menu. Manufacturers' training programs are also helpful, he observes.

"We like the 'plug-and-play'

Adam Jewell cuts and glues plastic drainfield lateral piping for a homeowner's onsite system.

aspect of many of the new technologies where the unit comes fully assembled in a box," Gunia says. "Our crew's job is to properly place the box, plumb and wire it, and build out the rest of the system. The preassembled units save time, cut costs and are popular with our crews. Management opportunities will grow exponentially as more ATUs come into use."

The company's operations, management and inspection services division is managed by Gunia's other son, Jeremiah. "He is our first responder on trouble calls," Gunia says. The company services FAST systems from Bio-Microbics Inc., AdvanTex units from Orenco Systems Inc., and WhiteWater systems from Delta Environmental.

The firm has about 400 O&M contracts in place, many using drip dispersal. In recent years, about 60 percent of the company's complete system installations have included aerobic treatment units. "Newly installed systems, like any machine, need service," Gunia says. "This is a natural and logical market for us."

System inspections for home sales have gone from raging to trickling, but that does not diminish the quality of the company's inspection service. "A long time ago, we came to the conclusion that an inspection must be comprehensive in nature, looking at all components," Gunia says. That means the tank must be pumped as part of the process.

Beyond self-interest

Gunia learned a great deal about delivering quality — and about new opportunities in the onsite business — through his involvement with WOSSA. Association events helped him develop relationships with "friendly competitors" who together work to raise the bar for the industry.

"Together, we have a louder voice and achieve greater successes for the industry," Gunia says. He believes involvement in his professional community pays dividends to the industry, to the regulating community and to customers. He has strong positive feelings for state and national industry tradeshows, each one "an opportunity to learn and grow."

There are personal benefits, too. As he gets more involved in WOSSA, doors open for him to influence the industry's future. He has appeared frequently on a WOSSA-supported live call-in radio program that airs every Sunday at noon. All this adds credibility to his message when he testifies before legislative committees or speaks in regulatory forums.

Gunia favors refocusing the licensure process by moving away from certification test preparation and subsequent examination to an on-the-job training period that brings hands-on work experience, followed by the certification exam.

Measuring success

Gunia believes that as the technology available to the industry becomes more sophisticated, "the big pipe's threat to onsite systems diminishes." Always focused on the customer, he notes, "Our job is not done until those that must rely upon the system and its technology understand it. If the customer cannot successfully use his system, we have failed in our mission." ■

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Five Tips for Dump Truck Shoppers

The right choices of engine, transmission, axle configuration and other features ensure that your truck fits your needs cost-effectively

By Greg Northcutt

If you're like most onsite system contractors, you buy a dump truck for one reason — to make money. The best way to do that is to resist the temptation to buy more performance than you need, yet also avoid skimping on the features that enable your truck to work most productively in your applications.

Whether you plan to buy a new truck or search for the best-fit used model, here are some ideas to help you buy no more and no less truck than you need.

Work with your team.

You'll be money ahead to include your truck and dump body dealers early in the process of specifying the features you want, notes Steve Ginter, vocational product manager for Mack Trucks Inc. "Make them partners in your buying decision," he suggests.

"Your truck dealer's knowledge about truck performance and needs in your local area is priceless — from helping determine the appropriate gross vehicle weight rating and suspension, to the best gearing and the most appropriate tires," Ginter says. "This kind of information can help you strike a good balance between the size of your truck and how well or how quickly it will pay off."

Meanwhile, he notes, your dump body dealer can help you select the type and capacity of the dump box and the best location of such components as battery boxes, air tanks and hydraulic fluid tanks. One critical decision concerns the clear CA (cab-to-axle) dimension — the distance from the back of the cab to the center of the bogie — needed to match the length of your dump box. Clear CA allows for any back-of-cab obstructions, like an exhaust pipe or stanchion.

A Volvo dump truck heads down the road. Truck and dump body dealers should be involved early in the buying process to determine the best fit and features for the job. (Photo courtesy of Volvo Trucks North America)

Another choice is the material used to build the dump body. An aluminum body, which can increase payload while saving fuel, may be adequate for handling sand for drainage or small stone, Ginter notes. "However, if you frequently encounter large rocks on your excavation project or switch between hauling sand one day and riprap the next, a steel dump body will be more durable."

And don't forget to discuss tires and wheels with your truck dealer. Weight-saving aluminum wheels clean easily. Also, compared to conventional steel wheels, they can increase payloads while dressing up your company image.

When it comes to choosing tires, tread design isn't the only factor to

"Your truck dealer's knowledge about truck performance and needs in your local area is priceless — from helping determine the appropriate gross vehicle weight rating and suspension, to the best gearing and the most appropriate tires. This kind of information can help you strike a good balance between the size of your truck and how well or how quickly it will pay off."

Steve Ginter

This Mack Granite Series dump truck features an axle-forward design. (Photo courtesy of Mack Trucks Inc.)

consider. "For some reason, tire preferences can vary from one region to the next," says Wade Long, marketing product manager for Volvo Trucks North America. "Equipping your truck with a type and size of tires popular in your area means replacement tires will probably be more readily available."

Consider maneuverability

Truck manufacturers generally offer a choice of two locations of the front axle — axle forward, where the axle is mounted about 28 or 29 inches behind the bumper, or axle back, where the axle is placed farther toward the rear of the truck.

In addition to affecting allowable axle weight limits and payload axle weight transfer, the location of the front axle affects turning radius. As Long notes, an axle-forward design provides about 40 to 45 degrees of wheel cut. However, an axle-back design, in which the axle is positioned 52 inches behind the bumper, shortens the wheelbase, providing about 50 degrees of wheel cut for a tighter turning radius and easier maneuvering in cramped quarters.

Weigh hauling needs

Another basic decision involves gross vehicle weight rating (GVWR). It determines the size of your payloads. It also has a direct bearing on choice of number and load capacities of the axles to stay within legal weight limits.

To reduce damage to federal highway roads and bridges, federal law limits the gross weight of trucks based on the number and spacing of axles. The shorter the distance between front and rear axles and the fewer the axles, the lower the weight permitted per axle. The maximum allowable weight is 34,000 pounds for a tandem axle and 20,000 pounds for a single axle. As a result, under the Federal Bridge Gross Weight Formula, a 25-foot, three-axle dump truck would have a gross weight limit of 54,000 pounds.

Frequently, Ginter notes, a dump truck with a 38,000-pound rear axle and an axle-forward design is equipped with an 18,000-pound front axle. In this case, a heavier-rated front axle usually isn't necessary, because the axle-forward configuration makes it difficult to transfer much more of the truck's weight to the front axle. However, for the same dump truck equipped with an axle-back design, a 20,000-pound front axle would be appropriate to handle the additional weight transferred from front to back with this axle position.

Choose the proper engine

Buying more horsepower than you really need can waste money. If you're not usually pushing GVWR limits, a smaller engine may be a good choice. At the same time, though, a lower-horsepower, lighter-weight engine can give you more payload capacity, if needed.

You may not need extra horsepower if you're operating on mostly flat jobsites and roads. Also, a more powerful engine generates more torque, which requires stronger and more expensive engine and drivetrain components.

"In general, if you don't usually operate at full GVWR, a smaller-displacement engine may be a better choice," Long says. "But if you operate in hilly or mountainous terrain and you want to maintain good startability and keep up your road speed on grades, then you'll probably be more satisfied with a larger-displacement engine."

"In general, if you don't usually operate at full GVWR, a smaller-displacement engine may be a better choice. But if you operate in hilly or mountainous terrain and you want to maintain good startability and keep up your road speed on grades, then you'll probably be more satisfied with a larger-displacement engine."
Wade Long

Evaluate transmissions

Manual transmissions, with a wide range of gear options, remain the most popular choice. More gear choices, of course, also improve your ability to match engine speed to your job. A low gear with a low range can prove helpful in keeping your truck moving in mud or sand. A multi-speed reverse may save you time, if your work involves backing long distances.

Although more expensive, an automatic transmission with a flexible torque converter makes up for its fewer gears and offers its own advantages. It doesn't require the shifting, which may be important in the case of a new driver or where multiple drivers with different skill levels operate the same truck. An automatic transmission also eliminates the expense of maintaining and replacing clutches. And with no clutch pedal, the driver is less fatigued at the end of the day. That can be an attractive feature for older, experienced drivers as well as new drivers, Ginter says.

In addition to driver skills and preferences, terrain is another factor to consider in deciding between manual or automatic. "If you drive in relatively flat country, a 10-speed manual or a six-speed automatic transmission may be appropriate, depending on engine size," Ginter says. "However, if you're working in steep hills or mountains at high GVW, a 13-speed or even 18-speed manual transmission may be a much better choice."

Another option combines the best of a manual and automatic transmission. Priced between these two transmissions, the automated manual transmission is gaining popularity. It eliminates the clutch and the hand shifting of a manual transmission. Instead, electronic sensors, processors and actuators do the shifting to match travel speed with the load and job application.

An automated manual transmission can also help cut fuel bills. It's lighter and uses energy more efficiently than a conventional automatic transmission "Also, it takes the driver out of the fuel economy picture and prevents the engine from running at high rpm," Long says. "With manual transmissions, many drivers shift at around 2,100 rpm and then reduce engine speed. Automated manual transmissions keep the engine in the range of 1,300 to 1,500 rpm."

That reflects the electronic control technology of today's engines. Conventional, mechanically controlled engines produce maximum torque at about 1,800 rpm, Long notes. The torque of engines controlled electronically peaks at 1,200 rpm.

Your truck dealer can explain these and other considerations in much more detail. However, these basic tips should get you off to a good start in making a smart dump truck buying decision.

Greg Northcutt is a freelance writer based in Port Orchard, Wash. He can be reached by e-mailing this publication at editor@onsiteinstaller.com. ■

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In Time for the Bell

An innovative team upgrades an elementary school's onsite treatment installation to accommodate a new subdivision and several businesses

By Scottie Dayton

Plumbing a new subdivision, four restaurants and several businesses into the Breitling Elementary School Waste Water Treatment Plant in Grand Bay, Ala., threatened to overwhelm its 30,000-gpd onsite system, sized to handle the school and a truck stop.

The Grand Bay Water Works Board Inc. decided to double the facility's capacity, and Preston Hughes, owner of Hughes Plumbing & Utility Contractors Inc. in Mobile, Ala., won the bid. He also installed Phase 1.

Paul Coletta, applications engineer for J.H. Wright, a Quanics distributor in Daphne, Ala., incorporated elements of Phase 1 into the expansion. Phase 2 combined septic tanks, low-pressure sanitary sewers, recirculation tanks, open-cell foam fixed-film filters, and a pump station discharging to chambers. The upgrade was completed when classes began last fall.

Site conditions

Soils are sandy with the water table 8 feet below grade. The site, a flat field, is part of the wastewater treatment plant.

System components

Coletta designed Phase 2 to handle 30,000 gpd. The major components of the entire system are:

Phase 1

- 20,000-gallon fiberglass septic tank. All tanks from Xerxes Corp.
- 20,000-gallon recirculating tank.
- Nine AX100 AdvanTex textile treatment modules from Orenco Systems Inc.
- Quick4 chambers from Infiltration Systems Inc.
- ProSTEP effluent pumping station, Orenco: Biotube pump vault; effluent pump; and riser, lid and control panel.

Phase 2

- 35,000-gallon fiberglass recirculating tank.
- Six 5,000-gallon ATS-AC-5000 AeroCell fixed-film modules with a 30-inch ATS-GRD-100/80/20 4-inch gravity recirculation device, Quanics.
- 1,400 Hi-capacity Envirochambers, Hancor Inc.
- Three duplex STEP systems, Quanics; 30-inch filtered pump vault; 50-gpm high-head turbine pump; and riser, lid and control panel.

System operation

At first, only the school was connected to Phase 1. A pump station at the school pumps wastewater to the septic tank at the plant. Settled wastewater gravity feeds to the recirculating tank, then to the AdvanTex modules in series.

As liquid trickles through synthetic textile sheets in the treatment units, microorganisms remove impurities. A gravity-flow collection system at the bottom of the last unit sends 80 percent of the effluent to the recirculation tank and 20 percent to the ProSTEP pump station.

Some of the 1,400 Hi-capacity Envirochambers are shown installed in the Phase 2 drainfield. (Photos courtesy of Hughes Plumbing & Utility Contractors Inc.)

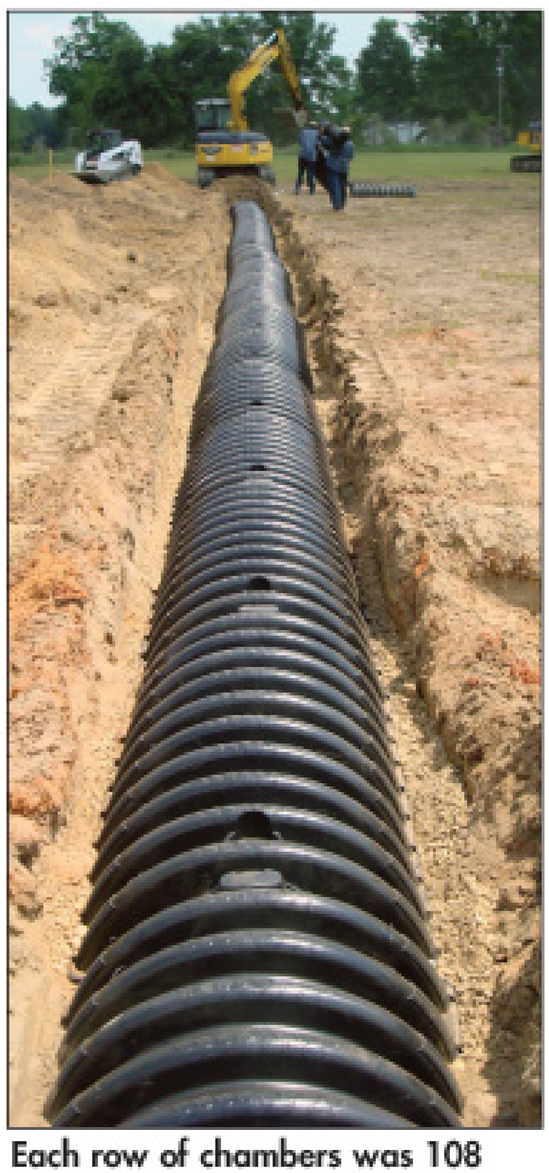
Effluent flows on demand from the pump station through a 4-inch PVC Schedule 40 pipe to a distribution box in the drainfield. The absorption bed has three zones of 18 rows, 108 feet long on 8-foot centers. Operators dose the zones via manual gate valves and determine when to switch zones by looking into the inspection ports at the end of each lateral. "The amount of

System Profile

Location:	Grand Bay, Ala.
Facility served:	Breitling Elementary School Waste Water Treatment Plant
Designer:	Paul Coletta, applications engineer, J.H. Wright, Daphne, Ala.
Installer:	Preston Hughes, Hughes Plumbing & Utility Contractors Inc., Mobile, Ala.
Site conditions:	Sandy; water table 8 feet below grade
Type of system:	AeroCell fixed-film units, Quanics Inc.; AdvanTex units, Orenco Systems Inc.
Hydraulic capacity:	60,000 gpd

A worker backfills the 35,000-gallon fiberglass recirculation tank.

Workers positioned the six 5,000-gallon AeroCell fixed-film treatment modules on the surface next to the recirculation tank.



Each row of chambers was 108 feet long in both drainfields.

"For Phase 1, I ran a centrifugal pump around the clock to dry the holes enough to install forms and pour concrete around the bottom of the tanks for ballast. The Phase 2 recirculating tank came with straps and concrete deadmen."

Preston Hughes

rain we get ruled out time-dosing the beds," says Hughes.

Until Phase 2, each parcel in Grand Bay had its own conventional onsite system. Settled wastewater from those septic tanks now flows through a 6-inch PVC low-pressure force main to a splitter box at the plant. By opening gate valves, operators direct the flow through 6-inch lines to Phase 1, Phase 2 or both to check BOD, TSS and evaluate which treatment system is doing better.

Phase 2 wastewater from the plant flows to the 35,000-gallon recirculating tank, where on-demand P-TE-50 pumps dose dedicated AeroCell modules in series. Spray nozzles inside the pre-engineered unit evenly distribute wastewater over the open-cell foam media to the desired treatment level. The porous cubes have a large surface area for microbial attachment, allowing high loading rates.

A gravity recirculation device at the bottom of the last module sends 80 percent of the effluent to the recirculation tank and 20 percent to the Phase 1 pump station. A second distribution box on a 4-inch outflow line lets operators direct the flow to either treatment system. Phase 2 has a 2-inch pipe tying into a distribution box at the drainfield. Its three zones of 18 rows, 100 feet long on 8-foot centers, also are dosed with manual gate valves.

Installation

Grand Bay Water Works installed the low-pressure force main. Hughes' crew used Komatsu PC 200 and PC 300 excavators to dig pits 15 feet deep, then bed them with 12 inches of pea gravel. "The tanks had to sit that deep if we were to plumb the components into the 24-inch-high risers," says Hughes. "However, groundwater threatened to float the tanks out of their holes."

The men drove wellpoints to combat the inflow, but the wellpoints could not keep up. "For Phase 1, I ran a centrifugal pump around the clock to dry the holes enough to install forms and pour concrete around the bottom of the tanks for ballast," says Hughes. "The Phase 2 recirculating tank came with straps and concrete deadmen."

Installing the drainfields was just time-consuming. "The only thing that happened was I had to buy 50 more chambers to make the zones uniform in length," says Hughes.

Workers then positioned the treatment modules on the surface next to the Phase 1 units. Once they were plumbed, the men built a berm around the AeroCell modules and covered them to the service access openings just as they had done with the AdvanTex units. "Phase 2 blended seamlessly with Phase 1," says Hughes.

Maintenance

Grand Bay Water Works services the low-maintenance system. Twice a year, a technician checks the condition of the media, vents, air supply and covers. The technician removes and cleans the spray nozzles and inspects the pumps and controls, and the effluent filter in the pump vault. He also evaluates the presence of odors within a 10-foot perimeter and the effluent quality. Buddy McGregor, utility manager, says the board was pleased with the system's performance and ease of service. ■

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Maryland Toughens Rules for Systems Near Chesapeake Bay

By Scottie Dayton

The General Assembly approved legislation that will require thousands of homeowners within 1,000 feet of Chesapeake Bay and Ocean City tidal waterways to add nitrogen-removal technology to their onsite systems. The ruling also applies to all new or replacement systems in these sensitive zones.

Officials estimate the areas have 51,000 onsite systems accounting for 25 to 30 percent of the nitrogen pollution. Funds raised from a $30 annual onsite system fee are expected to cover the $12,000 cost of adding nitrogen-removal technology.

Wisconsin

Lawmakers introduced legislation to update the definition of plumbing to include stormwater reuse and water reclamation systems. If passed, it also will allow people with a master plumber-restricted service license to install these systems, as currently allowed by the Department of Commerce.

The DoC proposed rules listing forfeiture amounts for violating the new conflict-of-interest law for onsite regulators and also proposed a mandatory contractor registry and charging of companies $100 every four years for the compulsory listing.

Virginia

The General Assembly approved an amended bill allowing Loudoun County, Va., to keep its moratorium on installing more advanced treatment systems until the state adopts guidelines regulating the technology, a process expected to take two years. The county enacted the moratorium after 12 of the 1,031 alternative systems installed from March 2001 through June 2008 failed. Construction damaged one.

California

The Assembly Environmental Safety and Toxic Materials Committee passed a bill that would repeal legislation effective in July 2010 requiring septic tanks to be pumped every five years. The proposed legislation would allow local jurisdictions to adopt their own pumping standards based on necessity. If passed, the ruling would save homeowners an estimated $1.5 billion in unnecessary upgrades. The bill is now in the Assembly Appropriations Committee.

Florida

A bill introduced in the House and now in the Health Care Regulation Policy Committee revises provisions for administrative actions by the Department of Health, increases fines for violations, provides for noncompliance enforcement measures, mandates periodic inspections and pump-outs of onsite systems, and establishes a septic tank contractor advisory panel. If passed, the bill was to take effect on July 1, 2009.

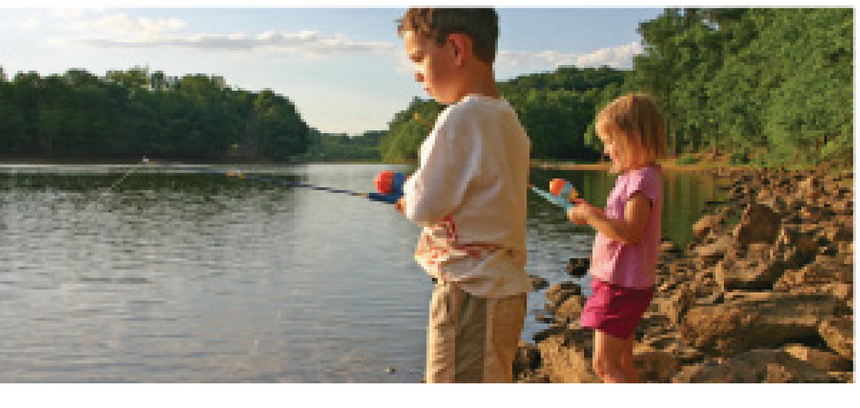
Minnesota

The amended Subsurface Sewage Treatment System Code states that, as of Feb. 4, 2010, contractors installing proprietary treatment technology and distribution media must use only those products registered with the Minnesota Pollution Control Agency. After Feb. 3, 2011, contractors must install only registered septic tanks and pump tanks. The amendment also mandates that onsite systems have their own electrical permit and be inspected by an electrical inspector.

New Mexico

The Environment Department Liquid Waste Certification Program began on July 1. It allows qualified homeowners to install or modify conventional onsite systems serving their primary residence.

The program requires certification of site evaluators, designers, installers, third-party inspectors, maintenance providers for advanced systems, and professional engineers. It also establishes an Education Steering Committee to identify training classes, professional conferences, workshops and other educational opportunities for continuing education credit. ■



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Jim Anderson and David Gustafson are connected with the University of Minnesota onsite wastewater treatment education program. David is extension onsite sewage treatment educator. Jim is former director of the university's Water Resources Center and is now an emeritus professor, as well as education program coordinator for the National Association of Wastewater Transporters. Readers are welcome to submit questions or article suggestions to Jim and David. Write to ander045@umn.edu.

'This Isn't My Job.' Or Is It?

A wise installer knows that engineers and site evaluators can make mistakes. An understanding of site evaluation procedures can help head off trouble.

By Jim Anderson, Ph.D., and David Gustafson, P.E..

When we talk to installers at our workshops about what should make up a good site evaluation, a number of them always ask, in effect, "Why do I have to worry about this? I get a design and a plan from the engineer or site evaluator, and all I need to do is be able to read the plan and put in the system."

Tim Haig of Watab Enterprises evaluates the soil at the site using a 4-inch bucket auger. (Photos courtesy of Tim Haig and Watab Enterprises)

Our consistent response is: Sometimes engineers and site evaluators are wrong or have missed something important. When you as the installer are there and starting to excavate, you are the last person who can recognize potential problems and correct them. You are also the first person the homeowner calls when things don't work out.

Therefore, if you are not doing the site evaluation work yourself, you still need to know what the steps are, so that you can recognize or catch potential problems.

What to evaluate

The purpose of the site evaluation is to understand the soil, hydrology and landscape of the site, to predict wastewater flow through the soil and into subsurface materials, and to provide information that can be used to design an onsite system to match the conditions.

Thus, every onsite wastewater system is a custom design that maximizes the capacity of the site to treat and disperse wastewater. The system's performance depends on:

- The soil's ability to accept and treat the effluent
- How water moves across and away from the site
- The level of pretreatment.

This is part of the balancing act that we talk about all the time. We want the soil to accept the amount of effluent the system generates, and at the same time make sure it is properly treated before it ends up somewhere else in the environment.

Beginning excavation and observing the soil.

Systematic approaches to site evaluation have been written up in many publications and manuals. Our purpose is not to duplicate them but to provide a general outline of the steps involved. In future articles, we will look more closely at certain aspects.

There are two major parts (or phases) to a site evaluation: preliminary evaluation, and field work. If the site evaluator does a good job of collecting information in the preliminary phase, that makes the site work easier and faster.

Preliminary phase

In the preliminary phase, you must know and understand the rules and requirements. This means both state rules and the local rules administered by the county or municipality. As an installer, you are responsible for knowing the rules you work under.

If you install a system too close to a water body because that is the way it was drawn on the design, you are still responsible, and you will be called upon to fix it. So you should check any installation for soil characteristics or other conditions you see that you feel do not meet the requirements.

The preliminary evaluation also involves determining or understanding how to estimate the average daily sewage flow for the residence. You can then combine that information with knowledge of the soil requirements and check to see if the system is being sized properly for the amount of effluent the soil is to receive. You can do this through a simple estimate of

daily sewage flow based on the number of bedrooms, which you can get from the homeowner.

You can obtain soils information from county soil surveys or from your own analysis on site. This will help you see whether the designed long-term acceptance rate is in line with the general soil characteristics.

You also need a working knowledge of the various onsite system options available. Although the exact details of the systems may not be critical, it is important to know the soil and site requirements for each type of system.

With this information, you can determine if the system design does or does not fit the site requirements. If it does, then you can confidently proceed with the installation.

Field evaluation

Once you are in the field, it is important to look around and evaluate the site for how and where water is likely to move. This includes both how water introduced to the system will move away and how other unwanted or extra water could be introduced to the site.

Is the system in a drainageway? Is it in an area that will receive water from the roof? If so, is dealing with this extra water a part of the plan? If not, you should discuss with the designer and the homeowner how to deal with it.

While you should not have to duplicate site evaluation work done by others, you need to have knowledge of the soil characteristics. When excavating for the septic tank or other pretreatment devices, you get an opportunity for a firsthand look at the soil.

You can evaluate soil texture to determine if the proper long-term acceptance rate (LTAR) was used to design the system. You should evaluate soil color to see if there is evidence of a high water table, and determine if the soil treatment system has the proper separation distance from it. You should note any other limiting soil layer, such as bedrock or dense soil layers, and compare that with the design parameters. Here is where knowledge of the rules and regulations comes into play, again with an understanding of the required separation distances.

You should also consider setbacks to water bodies or receiving environments. Also check setbacks from water-supply wells. In the end, what you observe may call for an advanced treatment system to protect the public interest adequately.

If you do all these things in the process of installation, or if you identify problems and solve them before the system is in the ground, everyone benefits. So whether you do the site evaluation and design yourself or you install from a plan, paying attention to the site evaluation will pay dividends. ■

The proposed site for an onsite treatment system prior to excavation.

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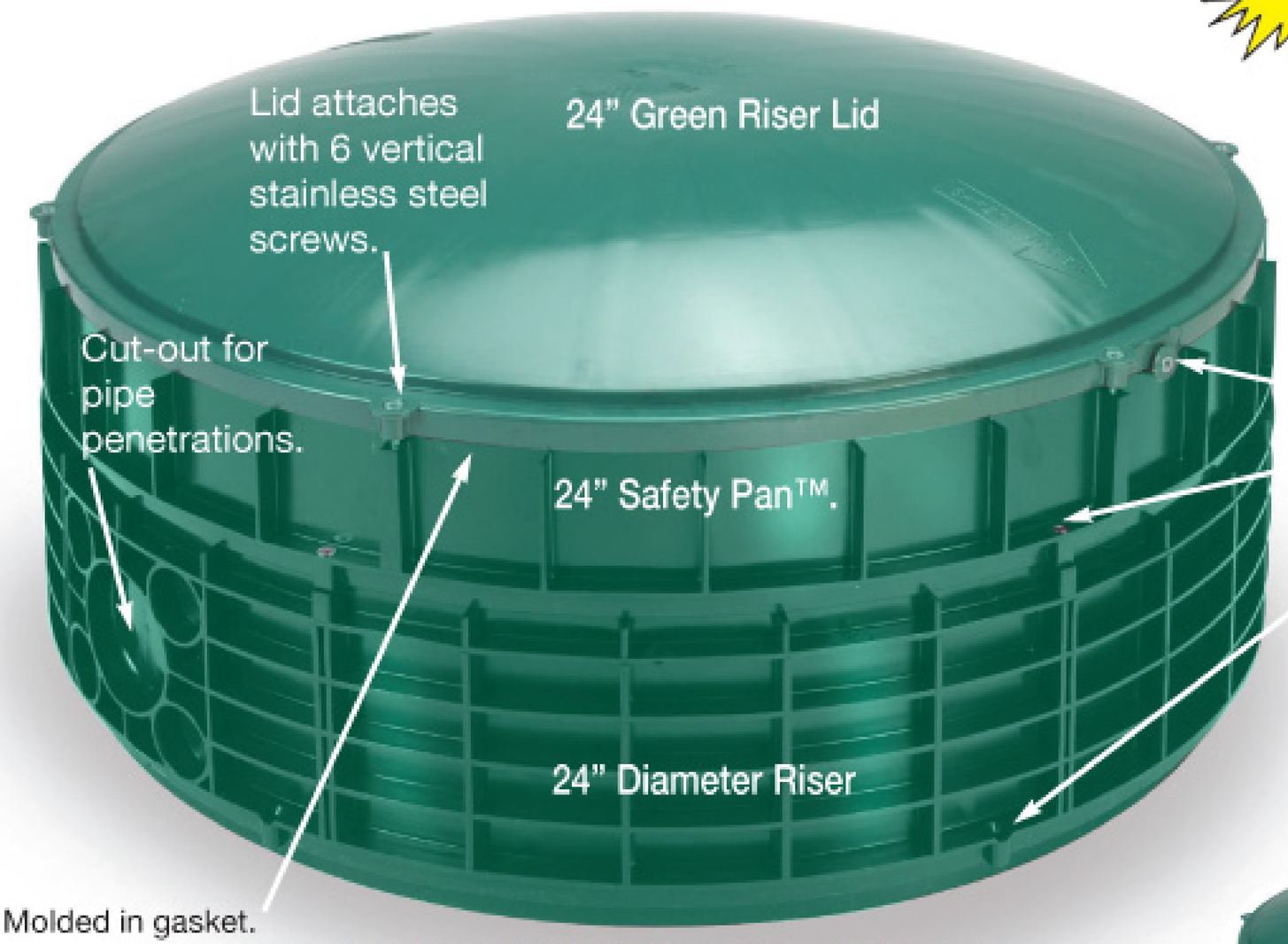

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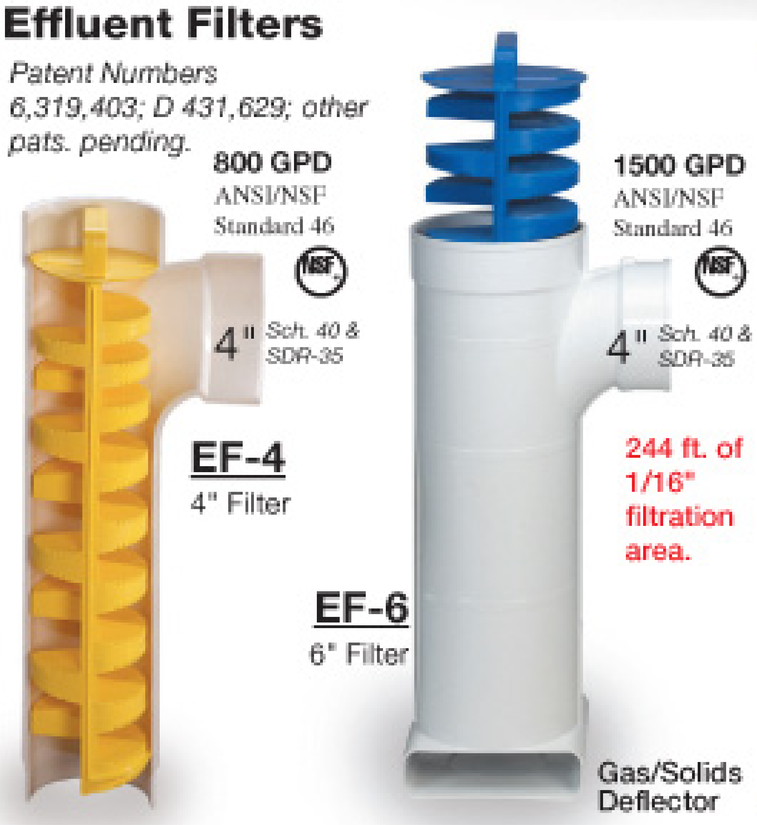

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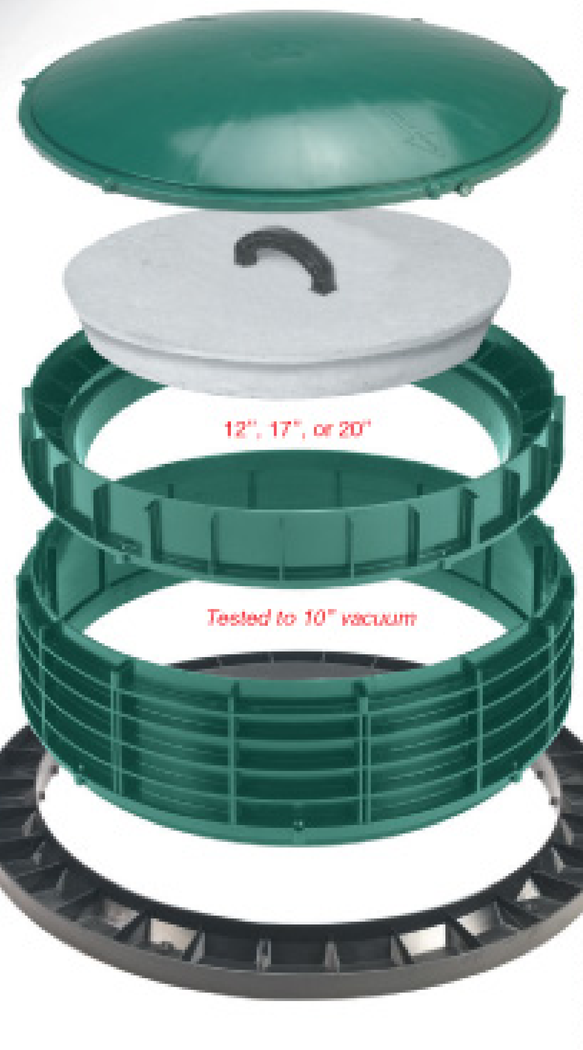

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Looking Inside

Installation and service professionals review procedures for presale inspections of septic systems to verify working condition

Question:

Can someone tell me the steps to performing a septic system inspection that would certify a system's working condition? Inspections are being required by lending institutions before they allow a mortgage. From what I've seen, the procedures seem to be arbitrary and determined by the contractor.

Answers:

I'm actually pleasantly surprised someone has asked this question. The very first step should be a visit or call to the local health department to get a copy of the sewage and well permits (and location drawings). In more than 20 years, I have never known a real estate inspector to ask the local health department for records.

The next step should be a visit to the site (yes, there are those who don't even do this). Locate the septic tank. A soil probe is very useful for this. Locate the well. Be sure you understand the kind of sewage treatment system you're evaluating. I had a real estate inspector dye-check an aeration system and fail it because dye appeared in the ditch!

We don't "certify" anything. Our letter to the lending institution or buyer is a clear description of what we found, where it is located relative to the house and other landmarks, and lastly a disclaimer that this is simply a snapshot of what we found on the day of the inspection.

Consider using this language in your contract: "This report indicates the condition of the above onsite wastewater treatment system at the time of the inspection. It does not guarantee it will continue to function satisfactorily." The good conditions we may find do not guarantee that the system will not fail tomorrow. No one can make such a guarantee.

We dig up the tank, then find the distribution box and do a water test on laterals to see if they are working. We pump the tank and box, and put a filter in the tank (we have to bring the tank to code). Then we call for the inspection. Those are the rules here — otherwise the bank won't approve a loan.

Question:

In our area, they have been installing low-pressure systems in new residential neighborhoods when the city doesn't want to put in large pump stations. Each home on the street has its own pump. Some use a septic tank, to a filter, to a pump station, and then up the street to a mainline sewer (100 to 200 yards or so).

Others have the household waste go straight to a grinder pump, then up the street to the mainline. The latter is the preferred system. As the city gets larger, there are more and more of these systems. Will these grinder pumps stand up to the average household's abuse? How often should these pump stations be cleaned? Is the former system using the septic tank better? I would think the cost of cleaning the tank occasionally would be significantly less than the cost of replacing one of those pumps. Any thoughts?

Answer:

In my area, they are installing septic tank effluent pumping (STEP) systems. In some cases, this allows a developer to install a cheaper centralized treatment plant to treat effluent, while leaving the solids (the expensive part to treat) behind in the tank to be someone else's problem.

The city takes over the plant in 10 or 15 years, and the real treatment plant then gets to deal with the tanks, which by then are full to the brim with anaerobic sludge. I would like to know: Why not just put a grinder pump in a lift station and get rid of everything, instead of leaving most of it behind?

For the record, those grinder pumps are pretty good. I have seen them at demonstrations chewing up diapers and leather gloves. In a lift station, the pump sucks right off the bottom, so there is not much need for cleaning. ■

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-Dr. Dan Wickham-
SludgeHammer co-founder

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Living Solution

Engineered wetland systems provide an onsite alternative to municipal sewers for new middle and high schools in Greensboro, N.C.

By Scottie Dayton

Extending the city sewer to its new middle and high school buildings would cost Guilford County Schools in Greensboro, N.C., more than $4 million.

Seeking a sustainable onsite system, representatives met with Amber Farrelly, P.E., of B&F Consulting in Raleigh, N.C., and Dave Maciolek, P.E., of Worrell Water Technologies in Charlottesville, Va.

Their design, involving horizontal and tidal flow wetlands with a rotary-kiln-expanded slate lightweight aggregate, produced the largest subsurface reuse system in North Carolina. The recycled water irrigates three athletic fields, saving the schools from buying 5 million gallons per year.

Site conditions

Soils are clayey atop loamy sand (saprolite). The water table is 40 feet below grade. Saprolite's conductivity is 10 to 12 gallons per square foot per day. Its application rate is 0.2 gallons per day per square foot.

System components

Farrelly designed the onsite system and Maciolek designed the wetlands. The system handles 30,600 gpd. Its major components are:

Middle school

- 5,000-gallon concrete grease trap. Concrete tanks from Stay-Right Precast Concrete Inc., Franklinton, N.C.
- 12,000-gallon dual-compartment concrete septic tank with three 12-inch FT1254-36 effluent filters from Orenco Systems Inc., Sutherlin, Ore.

A concrete conveyor belt system delivers gravel to the 20,537-square-foot horizontal wetland. Sandbags hold the geotextile fabric in place. (Photos courtesy of Michael Halas, Spectrum Environmental Inc.)

High school

- 8,000-gallon concrete grease trap
- 14,000-gallon dual-compartment concrete septic tank
- 6,000-gallon dual-compartment concrete septic tank with three Orenco 15-inch FT1154-36 effluent filters. Septic tanks are in series.

Advanced treatment

- Two 25,000-gallon single-compartment 10-foot-diameter fiberglass equalization tanks in series with 6-inch flexible coupling bottom connection.
- Fiberglass tanks from Xerxes Corp., Minneapolis, Minn.
- 32- by 96-foot Living Machine tidal flow wetland with three cells from Worrell Water Technologies, Charlottesville, Va.
- 110- by 240-foot Living Machine horizontal subsurface flow wetland. Stalite PermaTill aggregate from Carolina Stalite Co., Salisbury, N.C.
- Model EFB-0102-AB screen and 4000-micron mesh filter basket from Hayward Industrial Products Inc., Clemmons, N.C.
- Effluent collection chamber and lift station with two 1/2-hp 230-volt single-phase effluent pumps.
- Two 25,000-gallon single-compartment, 10-foot-diameter fiberglass effluent tanks in series with 6-inch flexible coupling bottom connections
- 4,475 feet of 4-inch force main
- Two 6.8-acre drainfields. Drainfield #10 has six zones and Drainfield #11 has eight zones. Both have duplicate replacement zones.
- 400,000 feet of 1/2-inch Netafim Bioline tubing: 2 foot on centers at 0.62 gallons per hour for drainfields and 16 inch on centers at 0.33 gallons per hour for athletic fields.
- Radio controls and control panels from Custom Controls, Raleigh, N.C.

System Profile

Location:	Greensboro, N.C.
Facility served:	Northern Guildford Middle and High Schools
Designers:	Amber Farrelly, P.E., B&F Consulting, Raleigh, N.C.; Dave Maciolek, P.E., Worrell Water Technologies, Charlottesville, Va.
Installer:	Michael Halas, Spectrum Environmental Inc., Raleigh, N.C.
Type of system:	Living Machine system, Worrell Water Technologies; Bioline drip tubing, Netafim, Rochester, N.Y.
Hydraulic capacity:	30,600 gpd

System operation

Wastewater from the middle school gravity feeds through a 6-inch PVC sewer and from the high school through an 8-inch sewer to a manhole. An 8-inch pipe carries the wastewater to the equalization (EQ) tanks.

When the tidal cells call for water, pumps send effluent from EQ 2 through a screen and filter basket. It mixes with water from effluent tank 1 before entering the bottom of each independent cell, rises to within 6 inches of the aggregate's surface, and percolates down to a drain.

Once the drain is full, an electric solenoid valve opens, directing effluent into a 6-inch pipe running through the center of the horizontal cell. Liquid disperses outward over the aggregate to a weir on the return side. The overflow runs to an effluent collection chamber and lift station that pumps it to effluent tank 1.

Pumps in the first compartment of effluent tank 1 send the liquid to the UV treatment area in the second compartment, where it recycles to the front of the tank. Pumps in effluent tank 2 send the water through a filter and flow meter before it goes to the absorption beds and athletic fields. Disinfected water from tank 1 flows into tank 2 as its level falls.

The Stalite PermaTill aggregate in the tidal and horizontal cells has a 97 percent void ratio with 50 percent more surface area than sand or gravel for higher nutrient and TSS removal. With high hydraulic conductivity, it will not clog, yet it retains 8 percent of the moisture for growing plants and microorganisms. "Stalite is the shining star in this system and one reason why it runs so well," says installer Michael Halas, owner of Spectrum Environmental Inc. in Raleigh, N.C.

Installation

Spainhour and Sons Grading of Rural Hall, N.C., excavated, transferred materials, and prepared the subgrade. The crew excavated 75- by 20-foot-wide holes for the tanks in a hillside. "It took four days to dig them because the south face required massive benching," says Halas. After placing gravel, the crew positioned the deadmen, installed the tanks, and backfilled them with gravel. The tanks were then water tested for 24 hours.

The Stalite PermaTill aggregate in the tidal and horizontal cells has a 97 percent void ratio with 50 percent more surface area than sand or gravel for higher nutrient and TSS removal. With high hydraulic conductivity, it will not clog, yet it retains 8 percent of the moisture for growing plants and microorganisms.

Installing the horizontal cell took seven days. Halas' crew covered the shaped and compacted native soil with geotextile. Then Landsaver Environmental in Richmond, Va., installed the 20-foot-wide lengths of 40-mil HDPE liner and sealed the joints. The liner was then water tested. Workers added another layer of geotextile fabric to protect the liner from 5-foot groupings of various-sized washed stone.

Reinforced concrete footers 18 inches deep supported the cinder block walls surrounding the tidal cell basin. After a mason set the courses and molded in the influent, discharge, and overflow penetrations, Halas' men applied the decorative stone veneer. They poured concrete floors in the cells, deburred the walls and floor, and covered the surfaces with geotextile fabric and the 40-mil liner.

A concrete conveyor belt system deposited 2 feet of washed stone and 3 feet of 5/16-inch washed Stalite PermaTill aggregate into the cells. The material does not compact and withstands 43,000 pounds per square foot of pressure.

Plants for the wetlands were harvested from the area and propagated on a nearby farm. "They had to winter over so they could be planted at the proper time," says Halas.

His crew cleared a wooded area for Drainfield #10. Each bed required 25 tractor-trailer loads of sand, with drip tubing installed 3 feet deep.

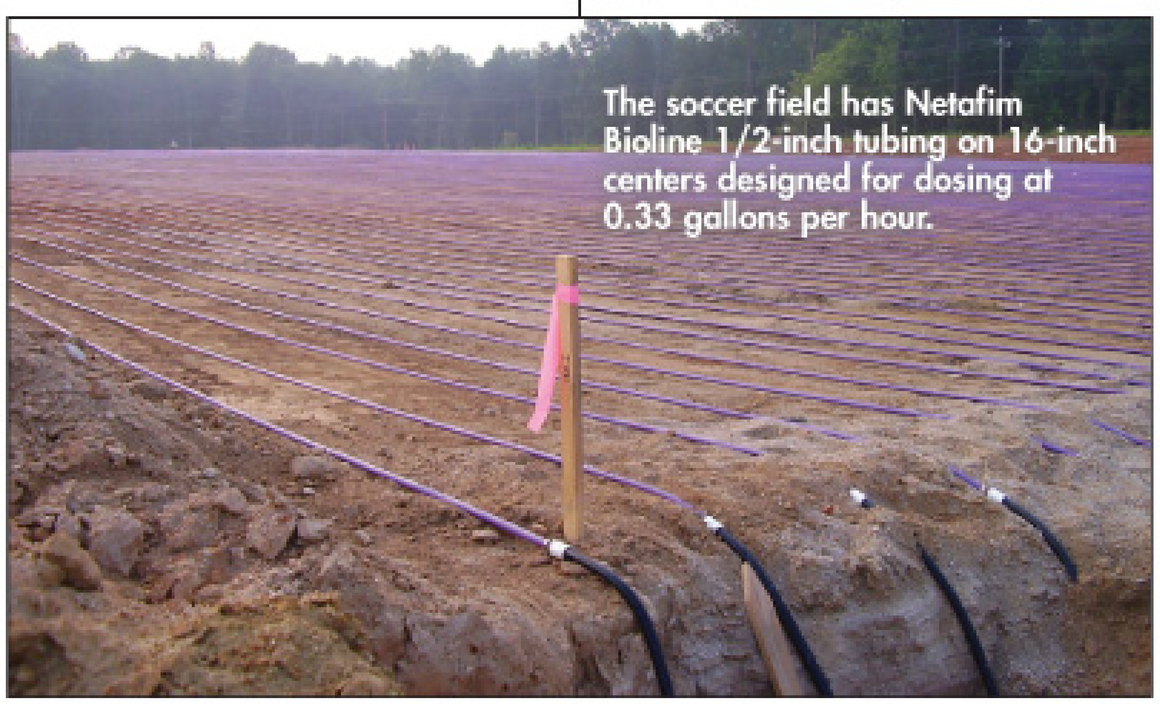
Spainhour and Sons excavated 4 feet for the athletic fields, then mined saprolite rock from different areas of the site for use as the drip irrigation system's treatment medium. Each field received 250 tractor-trailer loads of sand that Spainhour and Sons dredged from the Yadkin River 60 miles away, then screened.

Dosing the absorption beds and athletic fields is radio controlled because they are so far from the control room. Water from daily backflushing flows through the gravity sewer to the septic tank. Rainwater from a 308,000-gallon, 86- by 60-foot cast-in-place concrete cistern flushes the lines — and the toilets. Its top is a basketball court. The grass is a verdant, lush carpet on the athletic fields. "Everything works flawlessly," says Halas.

Maintenance

R. David Hicks LLC Environmental Consulting in Jamestown, N.C., operates and maintains the system, and uses a supervisory control and data acquisition (SCADA) system to monitor it. The effluent from the Living Machine has 0 to 0.5mg/l cBOD and TSS. A colder-than-normal winter caused no system shutdowns. ■

Workers from Spectrum Environmental Inc. level the Stalite PermaTill aggregate in a 32- by 32-foot tidal cell.



The soccer field has Netafim Bioline 1/2-inch tubing on 16-inch centers designed for dosing at 0.33 gallons per hour.

The football field is partially covered with sand dredged from the Yadkin River.

INDUSTRY news

August 2009

Former McDermott Co. President Dies

Thomas McDermott Sr., 76, former president of the A.I. McDermott Co., Oshkosh, Wis., passed away July 17. McDermott retired as president in 1994. He was active in the Wisconsin Pump & Well Suppliers group, the National Groundwater Association and the American Supply Association. He is survived by his wife, Helen, and four sons.

Oldcastle Precast to Offer Algaewheel Technology

Oldcastle Precast will offer Algaewheel's algal growth process technology as part of its decentralized wastewater treatment systems in the United States under terms of an agreement reached by both companies. Oldcastle will incorporate the "green" sustainable process in cluster housing, commercial, educational, institutional and other treatment applications. ■

WHAT'S YOUR OPINION ?

Onsite Installer welcomes letters from readers responding to articles we publish, or offering comments and opinions of interest to the industry. You can submit your letter by:

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All letters must be signed and limited to 300 words. We reserve the right to edit all letters for length and clarity.

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ASSOCIATION news

By Scottie Dayton

Onsite Installer invites your state association to post notices and news items in this column. Send contributions to editor@onsiteinstaller.com.

August 2009

Streaming Live Conference

The Colorado Professionals in Onsite Wastewater will broadcast its January 2010 conference in Denver live via Webcam to members on the western side of the state. Organizers have added certification and continuing education credits for onsite inspectors and installers to the conference training track. The board is working to set up quarterly training programs.

CPOW helped the Colorado Department of Health and Environment create its full-time position of onsite coordinator. That staff member, Barbara Dallemand, P.E., will plan strategies about the future of onsite regulation.

CPOW also helped the Colorado State University Extension produce a 15-minute DVD that addresses private wells and onsite systems. The video joins the university's Private Well and Septic System Educational Package.

Outlandish Product Claims

The Indiana Onsite Wastewater Professional Association offers a new source for combating Internet misinformation and rumors about onsite systems. The Indiana Septic System Forum (www.septicdesign.com/forums), monitored by regulators, excavators and design professionals, hosts discussion boards on general questions and posts regulatory documents in searchable PDF format. The association encourages members to take their onsite knowledge to the forum.

Installer Academy Rescheduled

The NOWRA board of directors announced that the Installer Academy will become part of the 2010 Pumper & Cleaner Environmental Expo Feb. 24-27 in Louisville, Ky. If the board goes ahead with its 2010 conference in St. Louis, Mo., it will occur in fall. The board is communicating with other wastewater associations about a possible joint conference.

Ceramic Membrane Bioreactor

The Ontario Association of Sewage Industry Services reports that a flat sheet ceramic membrane bioreactor from SJE-Rhombus is treating wastewater from 36 homes on Lake Melissa's Ravenswood Beach, Minn. This is the first treatment plant of its kind in the United States.

The homes had a decentralized system, but one of two small drainfields was ponding. The technology has a 200-square-foot footprint and handles 10,000 gpd. After the bioreactor, effluent then flows through the ceramic filter, where filtration at 0.2 microns removes even pharmaceuticals and endocrine disruptors.

The ceramic filters are backflushed periodically, and the system is monitored and controlled by way of the Internet. The filters will last 20 years before replacement. The system's final effluent was so clean that the failing drainfield recovered.

CALENDAR OF EVENTS

Aug. 6-8

Florida Onsite Wastewater Association Conference, Ocean Center, Daytona Beach. Call 407/937-2228 or www.fowaonsite.com.

Aug. 7-8

Wisconsin Liquid Waste Carriers Association Summer Convention, Potawatomi Northern Lights Casino and Hotel, Wabeno. Call 608/255-2770.

Aug. 12-14

North Carolina Septic Tank Association Outreach Symposium, Greenville Convention Center, Greenville. Call Monica Rhea at 704/739-5849 or visit www. ncsta.net.

Aug. 28-29

Georgia Onsite Wastewater Association Conference, Marietta Conference Center, Marietta. Call 678/646-0379 or visit www.onsitewastewater.org.

Oct. 20-21

Delaware On-Site Wastewater Recycling Association Technical Conference, Dover Downs Hotel and Casino, Dover. Call Mike Cotten at 302/226-2844 or visit www.dowra.org.

Oct. 22-23

Ontario Association of Sewage Industry Services Rural Wastewater Treatment Expo, Hamilton. Call 877/202-0082 or visit www.oasisontario.on.ca.

TRAINING & EDUCATION

National Association of Wastewater Transporters

NAWT has these sessions:

- Oct. 9-10 – Waste Treatment Symposium, Orlando, Fla.
- Nov. 5-6 – Operation and Maintenance, San Luis Obispo, Calif.

Call NAWT at 800/236-6298 or visit www.nawt.org. For California classes, call MaryAnne Bobrow at 530/321-2207 or e-mail maryanne@cowa.org.

Alabama

Licensing classes are the joint effort of the Alabama Onsite Wastewater Association (AOWA) and University of West Alabama (UWA). Courses are at the UWA-Livingston campus unless stated otherwise:

- Sept. 3-4 – Continuing Education, Florence
- Sept. 16-18 – Advanced Level I Installers.

Call 334/396-3434 or visit www.aowa.org.

Iowa

The Iowa Onsite Wastewater Training Center at Ankeny is offering:

- Sept. 15 – Site Evaluation and Design.

Call Annette Adams at 515/964-6464 or visit www.iowwa.com.

Michigan

The Michigan Onsite Wastewater Training and Education Center at MSU Tollgate Center in Novi is offering this course:

- Sept. 24-25 – Onsite Wastewater Systems Maintenance.

Call Barb DeLong at 517/355-4720 for registration, e-mail Ted Loudon at loudon@msu.edu for course information, or visit www.egr.msu.edu/age/outreach.html.

Missouri

The Missouri Smallflows Organization is offering a two-hour wastewater course Sept. 11 in Clinton. Call Fred Boehler at 660/885-8193 or visit www.mosmallflows.org.

New England

The New England Onsite Wastewater Training Program at the University of Rhode Island in Kingston has these workshops:

- Sept. 3 – Wastewater Treatment Basics
- Sept. 17 – Innovative and Alternative Technology Overview
- Sept. 22-23 – Inspecting Onsite Systems.

Visit www.uri.edu/ce/wq or contact David Kalen at 401/874-5950 or davidkalen@mail.uri.edu.

North Carolina

North Carolina Soils and On-Site Wastewater Training Academy has the following courses at Raleigh unless stated otherwise:

- Sept. 15 – Subsurface Wastewater System Operator Training, Bolivia
- Sept. 23-25 – Designing Wastewater Irrigation Systems.

Call Joni Tanner at 919/513-1678 or visit www.soil.ncsu.edu/training.

Pennsylvania

The Pennsylvania Septage Management Association is offering an Onsite Inspection course Sept. 23-25 in Apollo. Call 717/763-7762 or visit www.psma.net.

Utah

The Utah On-Site Wastewater Treatment Training Program is offering Onsite Wastewater Treatment

Certification Workshops in Heber City as follows:

- Sept. 22-23 – Level 1 Certification
- Sept. 24 – Level 1 Certification Renewal
- Sept. 25 – Level 2 Certification Renewal.

Call Carmell Burns at 435/797-3174 or visit http://uwrl.usu.edu/partnerships/training/classes.html.

Virginia

The following courses by the Virginia Center for Onsite Wastewater Training are at Blackstone:

- Sept. 10 -11 – Pumps and Controls
- Sept. 15-16 – Onsite Sewage Regulations
- Sept. 22-23 – Onsite Sewage Regulations
- Sept. 28-Oct. 2 – Design Camp I.

Contact Lydia Cox at 434/292-3101 or visit www.southside.edu/academics/ed-workforce. ■

PRODUCT news

August 2009

Bord na Mona Introduces Wastewater Reuse System 64

The PuraMc compact membrane graywater recycling system from Bord na Mona Environmental Products U.S. Inc. is designed to produce residential water suitable for non-potable reuse, such as toilet flushing and irrigation. The system uses ultra-filtration membranes to remove solids and pathogens from wastewater without the need for chlorination or UV treatment in the removal of BOD, nitrogen and phosphorus. **336/547-9338; www.bnm-us.com.** ■

ONSITE installer classifieds

August 2009

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BLOWERS

VFC200P-5T, FUJI Pumps, Regenerative Blowers, Ring Compressors. All models, accessories. Authorized distributor. Authorized parts and repair center. Call 888-227-9822. www.carymfg.com (IBM)

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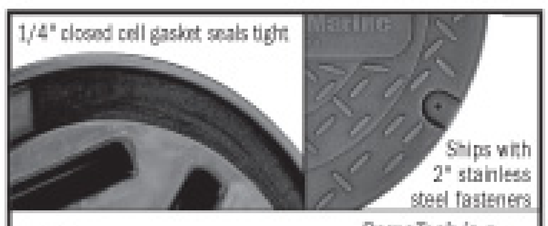

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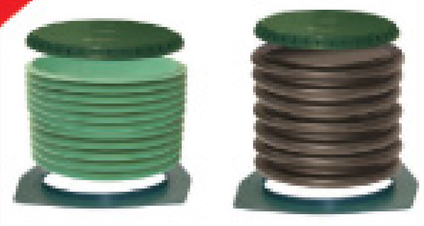

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