

July

2010

ON SITE

# Installer™

PROMOTING WASTEWATER TREATMENT QUALITY AND PROFESSIONAL EXCELLENCE

[www.onsiteinstaller.com](http://www.onsiteinstaller.com)

A look at  
concrete erosion

Page 22

Successful inspections

Page 12

Latest in mini-excavators

Page 16

## Quality to No End

Commitment to excellence means  
growth for a Kentucky contractor

Page 8

PAID  
U.S. POSTAGE  
PUBLISHED  
COLE  
PUBLISHING

CHANGE SERVICE REQUESTED

COLE PUBLISHING INC., PO BOX 220, THREE LAKES WI 54562

# contents

July 2010



## 8 COVER STORY Quality to No End

By Gil Longwell

**ON THE COVER:** Thompson Septic Systems in Smithfield, Ky., strives for excellence and so gains great word-of-mouth advertising. Here, co-owner Greg Thompson digs a lateral line with a laser transit attached to the excavator boom, while son Matt Thompson pours gravel. (Photography by Weasie Gaines)

## 6 Breaking Ground: Getting It to Fit

Installing an onsite system on a lakefront lot turns out to be a complex exercise, even though the parcel already had county approval for a conventional system.

By Ted J. Rulseh, Editor

## 12 Basic Training: Passing Muster

Onsite system inspections are becoming more common. Here are five steps to follow to complete a thorough, professional system evaluation.

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

## 14 Industry News

## 16 Machine Matters: Nowhere to Turn?

These compact excavators are titanic time-saving tools when a job forces you to work around obstacles or on postage-stamp-sized properties.

By Greg Northcutt

## 18 Rules and Regs: Minnesota Community Seeks Remedy for Failed Systems

By Scottie Dayton

## 20 Running the Ranch

These monitoring, control and alarm systems keep tabs on onsite treatment and help ensure reliable onsite system performance.

By Benjamin Wideman

## 22 Seeking Concrete Answers

Experts evaluating septic tank corrosion seek the aid of industry professionals who discover deterioration during cleaning and maintenance.

By Scottie Dayton

## 24 System Profile: Really Kwik

A team mobilizes to beat winter weather and other challenges and finish an onsite system in time for a travel center grand opening.

By Scottie Dayton

## 27 Product News

## 28 Association News

News, Calendar of Events; Training and Education

### Coming Next Month: August 2010

#### Large-Scale and Commercial Onsite Treatment Systems

- Breaking Ground: Gearing up for the NOWRA Conference
- Basic Training: Getting the wiring right
- Machine Matters: Towable excavators and flexible hitches
- System Profile: ExtremeSTP system serves Alaska resorts

# onsite installer

Published monthly by



1720 Maple Lake Dam Rd. • PO Box 220  
Three Lakes, WI 54562

In U.S. or Canada call toll free 800-257-7222  
Elsewhere call 715-546-3346

www.onsiteinstaller.com

E-mail: info@onsiteinstaller.com • Fax: 715-546-3786

Office hours: 7:30 a.m.-5 p.m. Central Time, Mon.-Fri.

#### SUBSCRIPTIONS:

A one year (12 issue) subscription to Onsite Installer™ in the United States or Canada is free to qualified subscribers. A qualified subscriber is any individual or company in the United States or Canada that partakes in the installation, design, maintenance, manufacture, treatment, consulting or sale of onsite wastewater treatment systems or supplies. Non-qualified subscriptions are available at a cost of \$60 per year in the United States and \$120 per year outside of the United States. To qualify visit [www.onsiteinstaller.com/qualify](http://www.onsiteinstaller.com/qualify) or call 800-257-7222.

Our subscriber list is occasionally made available to carefully selected companies whose products or services may be of interest to you. Your privacy is important to us. If you prefer not to be a part of these lists, please contact Nicole at [nicole@colepublishing.com](mailto:nicole@colepublishing.com).

#### CLASSIFIED ADVERTISING:

Rate: \$1 per word, per month. Minimum of 20 words or \$20. All classified advertising must be paid in advance. DEADLINE: Classified ads must be received by the first of the month for insertion in the next month's edition. PHONE-IN ADS ARE NOT ACCEPTED. Fax to 715-546-3786 only if charging to MasterCard, VISA, Discover or AmEx. Include all credit card information and your phone number (with area code). Mail with check payable to COLE Publishing Inc. to the address above. CLASSIFIED ADVERTISING APPEARS NATIONWIDE AND ON THE INTERNET. Not responsible for errors beyond first insertion.

#### DISPLAY ADVERTISING:

Contact one of our sales staff below at 800-994-7990. Publisher reserves the right to reject advertising which in its opinion is misleading, unfair or incompatible with the character of the publication.



Kim McGee



Jim Flory



Winnie May



Kayla Wilkowski



Jim Koshuta

#### EDITORIAL CORRESPONDENCE:

Send to Editor, Onsite Installer, P.O. Box 220, Three Lakes, WI, 54562 or e-mail editor@onsiteinstaller.com.

#### REPRINTS AND BACK ISSUES:

Visit [www.onsiteinstaller.com](http://www.onsiteinstaller.com) for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or e-mail [jeffl@colepublishing.com](mailto:jeffl@colepublishing.com). To order back issues, call Nicole at 800-257-7222 (715-546-3346) or e-mail [nicole@colepublishing.com](mailto:nicole@colepublishing.com).

#### CIRCULATION:

Circulation averages 19,848 copies per month. This figure includes both U.S. and International distribution.

© Copyright 2010 COLE Publishing Inc.

No part may be reproduced without permission of the publisher.



## PUMPER & CLEANER ENVIRONMENTAL EXPO INTERNATIONAL

[www.pumpershow.com](http://www.pumpershow.com)

Education Day: March 2, 2011

Exhibits Open: March 3-5, 2011

Kentucky Exposition Center  
Louisville, Kentucky



# ADVERTISER **index**

July 2010

COMPANY	PAGE	COMPANY	PAGE
 Alderon Industries, Inc. ....	27	Presby Environmental Inc. ....	13
 Alita Industries, Inc. ....	29	Romotech .....	31
Anchor Graphics, Inc. ....	31	RotoSolutions, Inc. ....	31
 Bio-Microbics, Inc. ....	3	Salcor, Inc. ....	4
 BrenLin Company, Inc. ....	14	Sanitation Insurance Services ..	19
BS Design Corp. ....	31	Septic Seep .....	31
Champion Pump Company .....	15	 Septic Services, Inc. ....	27
Crest Precast, Inc. ....	29	<b>Septronics</b>	
 Eljen Corporation .....	4	Septronics, Inc. ....	18
Fergus Power Pump, Inc. ....	18	Shaddix Company, Inc. (The) .....	31
Hydro-Action Industries .....	14	Simple Solutions Distributing, LLC	31
 Jet, Inc. ....	31	<b>SJE-Rhombus</b>	
National Precast Concrete Assoc. ...	7	SJE-Rhombus .....	15
 Orengo Systems, Inc. ....	11	 SPI	
Pagoda Vent Company (The) .....	31	SPI - Septic Products, Inc. ....	23
 Polylok, Inc. ....	32	 T&T Tools	
		T&T Tools, Inc. ....	15
		 Tuf-Tite	
		Tuf-Tite, Inc. ....	5
		 Wieser	
		Wieser Concrete Products Inc. ....	4

## Enjoy this issue!

Established in 2004, *Onsite Installer*™ fosters higher professionalism and profitability for those who design and install septic systems and other onsite wastewater treatment systems.



Join the online Discussion Forum at [onsiteinstaller.com](http://onsiteinstaller.com)

## Subscriptions are FREE

to qualified industry professionals.

Return the attached Free Subscription Card or call us today at 800-257-7222

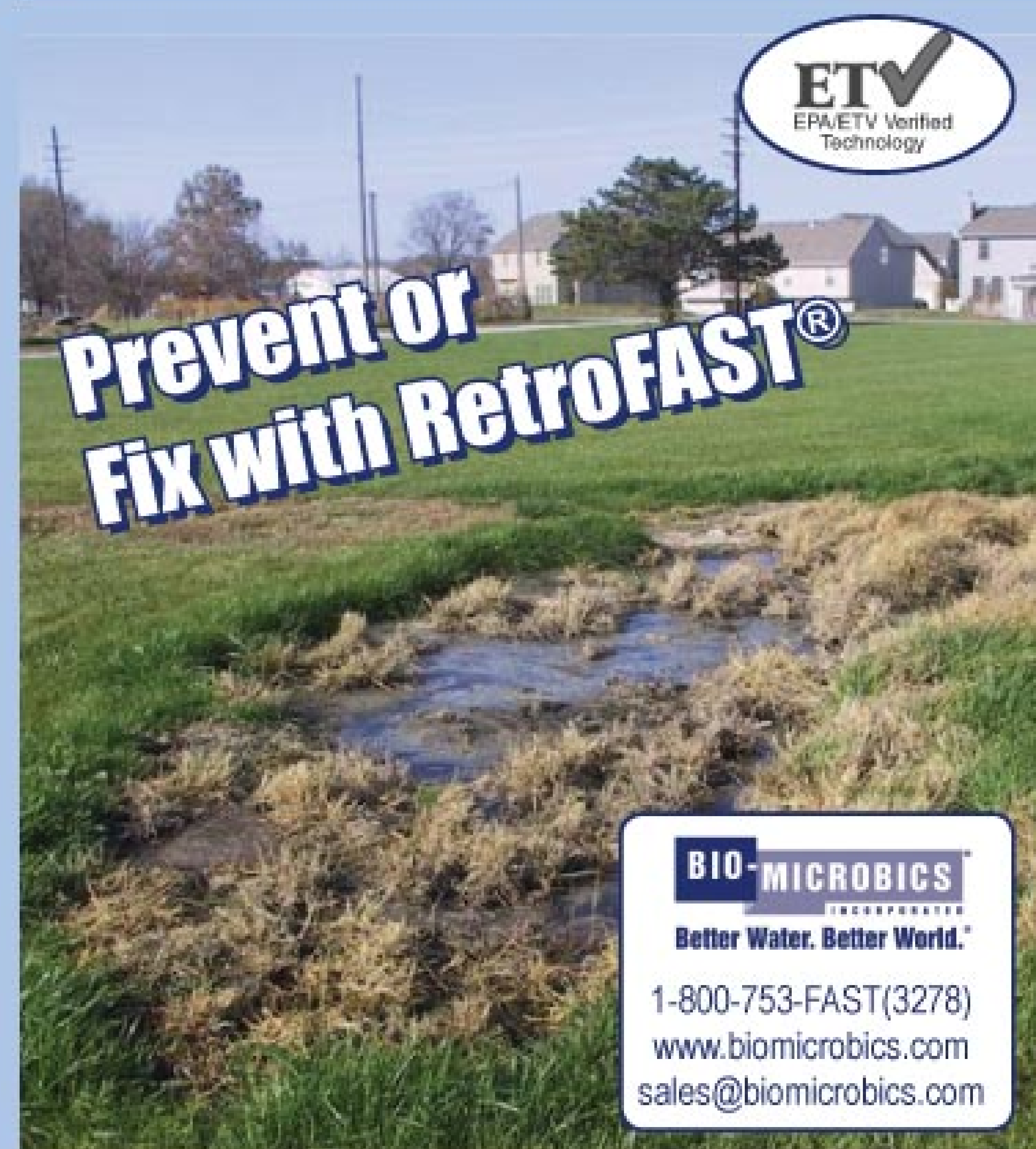
## S.O.S.-Save Our Septic™!

### Money-Back Warranty

Introducing the Bio-Microbics S.O.S.-Save Our Septic™ Prevention-Remediation Program. Utilizing the RetroFAST® Septic System Enhancement, you can remediate or prevent:

- Soggy lawns
- Foul odors
- Plumbing back-ups

Extend the life of your septic system with the RetroFAST® and prevent future signs of septic problems while fixing current issues...*find out more!*



**BIO-MICROBICS**  
INCORPORATED

Better Water. Better World.™

1-800-753-FAST(3278)

[www.biomicrobics.com](http://www.biomicrobics.com)

[sales@biomicrobics.com](mailto:sales@biomicrobics.com)

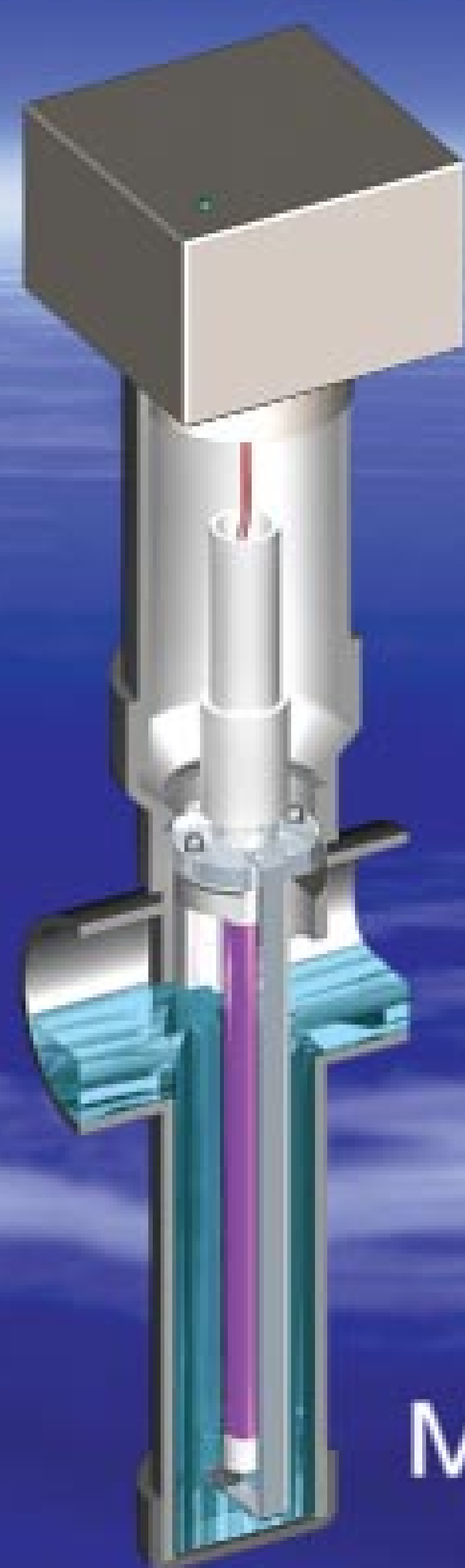


...without the use of any additives, chemicals, or re-landscaping!

© 2010 Bio-Microbics, Inc. • phone: 913-422-0707 • fax: 913-422-0808 • [www.biomicrobics.com](http://www.biomicrobics.com)  
Save Our Septic is a trademark of Bio-Microbics, Inc. RetroFAST is a registered trademark used under license.

# SALCOR UV DISINFECTION

## *The Finishing Touch*



Model  
3 G

- Designed for Onsite Systems
- Gravity Flow to 6 GPM
- Installed in Ground or Pump Tank
- Minimum (Annual) Maintenance
- Two Year UV Lamp Life
- NSF and Other Third Party Tests Confirm Superior Bacteria and Virus Kill.

### **Salcor Inc.**

P. O. Box 1090, Fallbrook, CA 92088

**(760) 731-0745** Fax: (760) 731-2405

## **Eljen GSF** **Geotextile Sand Filter**

### **Passive Advanced Treatment Technology**

- Independent 3rd party testing confirms BOD and TSS <5 mg/l and Fecal Coliform reduction of 99.9%
- Much smaller installation area
- Greater long-term performance
- Good for sensitive lakeside and restricted building sites
- Lightweight recycled materials



### **FLEXIBLE SITE INSTALLATION**

- Trench or Bed layouts
- Level or Sloped sites
- At Grade or Mound
- Serial & Pressure distribution
- Fast or Slow soils
- Clean & easy installation!

TIME  
PROVEN  
FOR OVER  
25 YEARS

**eljen**  
CORPORATION

Innovative Products and Solutions Since 1970  
125 McKee St., E. Hartford, CT 06108  
860-610-0426 • Fax: 860-610-0427  
Email: info@eljen.com

**eljen.com**  
800-444-1359

## **LARGE PRECAST TANKS TO 40,000 GALLONS**



- ◆ Septic, Grease Interceptors, Holding Tanks
- ◆ Available in Sizes 750 to 40,000 Gallon
- ◆ Extra Heavy Duty Tanks—HS20 Loading
- ◆ Bituminous Coating, Fast, Efficient Setting
- ◆ Vacuum Tested, Water Tight Structures
- ◆ Tanks for Bio-Microbics and Nibblers, Sand Filters
- ◆ Nationwide Delivery • Custom Sizes for Any Project



**WIESER**

CONCRETE PRODUCTS, INC.

**1-800-325-8456**

Join Us On the Web:  
[www.wieserconcrete.com](http://www.wieserconcrete.com)





# Septic Tank Riser, Lid & Safety Pan™

**FREE FREIGHT ON  
FULL CARTONS!**



## Tank Adapter Ring

New - Horizontal Safety Screw.

Safety Pan™ to Riser attachment with 6 vertical stainless steel screws.

Riser to Riser attachment with 6 vertical stainless steel screws.

Patent Numbers  
5,617,679 &  
5,852,901; other  
pats. pending.

## Riser Lid

with Molded-in gasket.  
Available in 12", 16", 20" and 24" diameters.

Concrete Lid w/handle

## Safety Pan™

Safety Pan™ available in 16", 20" and 24" diameters.

## Riser

For septic tanks. Stackable in 6" increments. Available in 12", 16", 20" and 24" diameters.

## Tank Adapter Ring

For mounting riser flush to top of tank when casting-in is not an option.



Available in 12", 16", 20" and 24" diameters.

## Effluent Filters

Patent Numbers  
6,319,403; D 431,629; other  
pats. pending.

800 GPD  
ANSI/NSF  
Standard 46

4" Sch. 40 &  
SDR-35

**EF-4**  
4" Filter

**EF-6**  
6" Filter

1500 GPD  
ANSI/NSF  
Standard 46

4" Sch. 40 &  
SDR-35

244 ft. of  
1/16" filtration  
area.

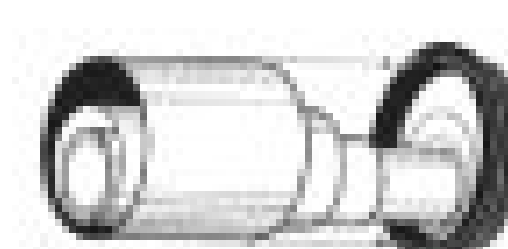
Gas/Solids  
Deflector

## One-Piece Tank Seal

For concrete Septic tanks and D-boxes.  
Accepts pipes from 1-1/2" to 4".  
Mounts with or without concrete flash.



**TS-4-RUBBER TANK SEAL**  
(will hold 10psi)  
**TS-4PRO TANK SEAL**  
(will hold 5" vacuum)



Free Freight: 32¢

Patent No's  
5,624,123  
& 5,711,536;



**Tuf-Tite®, Inc.** • 500 Capital Drive • Lake Zurich, IL 60047  
800-382-7009 • 847-550-1011 • (fax) 847-550-8004 • [www.tuf-tite.com](http://www.tuf-tite.com)  
Plastic... Our Business, Not Our Hobby™



**Feedback**

Onsite Installer™ welcomes your comments, ideas and suggestions on how we can serve you better. Call 800/257-7222; fax 715/546-3786; or e-mail [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).



# Getting It to Fit

**Installing an onsite system on a lakefront lot turns out to be a complex exercise, even though the parcel already had county approval for a conventional system**

**By Ted J. Rulseh, Editor**

**T**he northern Wisconsin lake lot my wife and I bought last December came with a completed soil evaluation and with county health department approval for a conventional septic system. It turns out that doesn't mean installing a system will be easy. A number of factors complicate the project.

When we bought the lot last December, I promised to share our experience as onsite system customers. As I write this early on a Monday, I am planning to drive three hours north in the evening, stay the night in a travel trailer we have parked on the lot, and meet with the installer, soil tester and homebuilder in the morning.

We're working with an installer subcontracting for the builder — it seemed simpler that way given the travel distance. I do expect to observe the installation, and in the morning I'll watch the digging of a new soil test pit, and perhaps two or three. Did I mention that there are complications?

## Wooded hillside

The lot, on the lake where we have taken rented-cottage vacations with our kids for the past 20 years, is fully wooded with mostly red oaks, a number of hemlocks, several stately white pines, a birch here and there, and other trees I haven't inventoried.

It also has a steep slope down to the water. How steep? Well, a walk up the hill from the lake leaves

this 57-year-old, in pretty good physical shape, with a thumping heart. We certainly need to cut some stairs into the hill to make the climb easier, and we'll need an above-grade stairway at the waterfront, where the slope is most severe.

The lot is 100 feet wide. There are, of course, 10-foot setbacks from the side property lines. The property is about 200 feet deep, but the county shoreland zoning law specifies a 75-foot setback for any structure from the lake's ordinary high-water mark, and a setback of 50 feet for the drainfield.

The drainfield also must be at least 10 feet from the cottage we build, and we want to leave room between the cottage and the town road so that we can keep the semi-circle driveway that's already in place. The lot to the left of ours has a cottage with a well that requires a 50-foot separation from the drainfield.

And then there's the matter of preserving trees. There isn't much point in having a wooded lot if you're just going to clear-cut it. So you can see that there are issues in placing both a cottage where we want it and a septic system where we need it.

## Keeping trees

Some weeks ago, my wife and I took four little red flags supplied by the builder and crudely marked the corners of what we consider the ideal cottage location. It's toward the top of the hill, in a spot where

the trees are thin and relatively few would need to be cut.

Unfortunately, a cottage built on that spot would come too close to the spot where the county-approved soil test hole was dug. So we have a choice: Move the house farther back up the hill — to where it would encroach on the driveway — or move the drainfield farther down. Actually, it appears a little of both may be necessary.

## Or Plan C?

If the soil test farther down the slope doesn't work out — or maybe even if it does — there could be another spot for the drainfield. That's at the top of the slope, to the left of the house location as you face the water.

It's a relatively flat area, close to the side property line. It may or may not be big enough. And using it would mean removing some trees

**"My wife and I took four little red flags supplied by the builder and crudely marked the corners of what we consider the ideal cottage location . . . Unfortunately, a cottage built on that spot would come too close to the spot where the county-approved soil test hole was dug. So we have a choice: Move the house farther back up the hill — to where it would encroach on the driveway — or move the drainfield farther down."**

Hence the soil test I will observe in the morning. The installer will dig a test pit on a relatively flat portion that runs across the lot, parallel to the lakefront. If the soil is suitable, he'll eventually install a slender drainfield there (about 10 feet wide by 66 feet long), big enough for a three-bedroom home, though we plan a two-bedroom cottage.

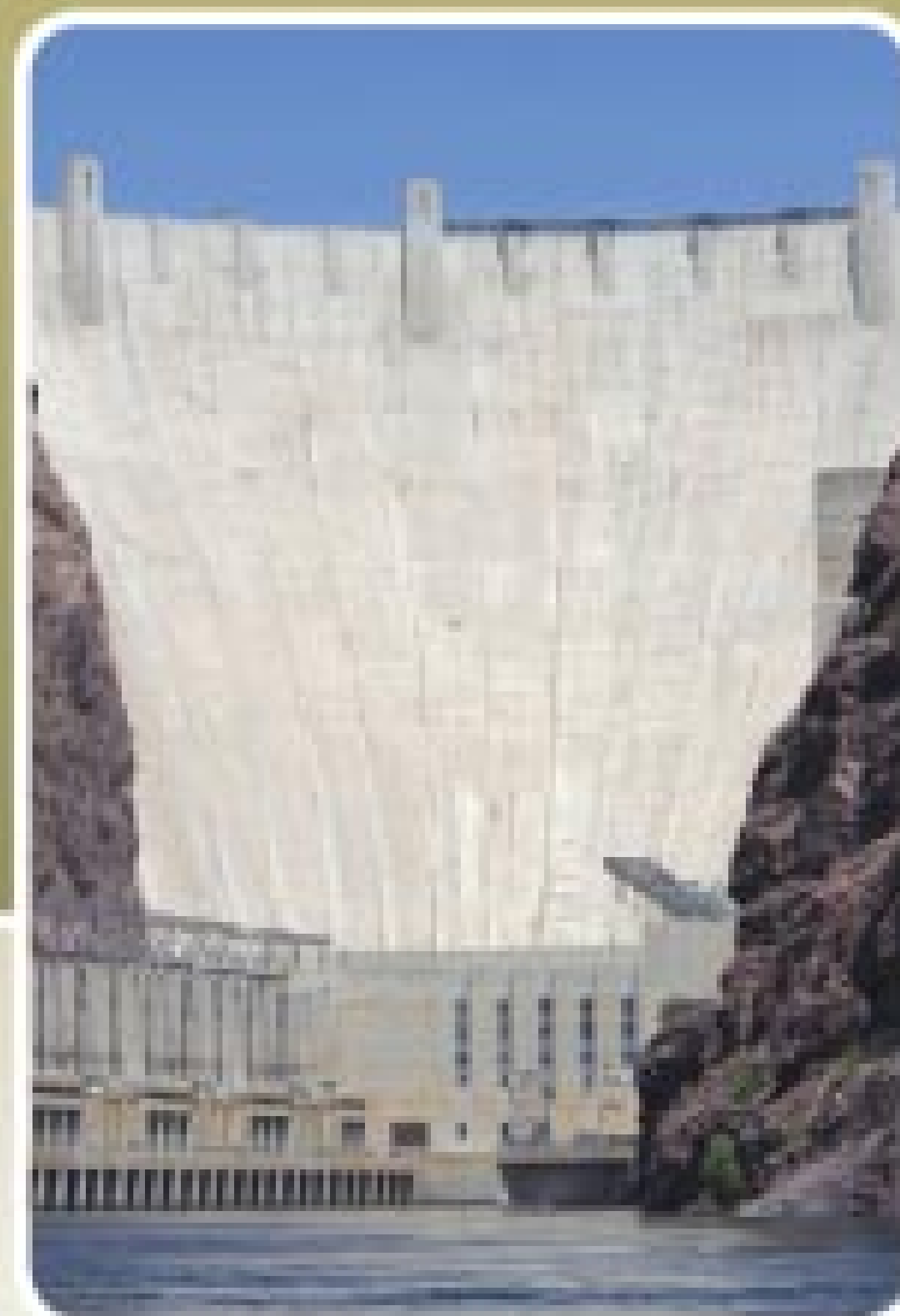
And if the soil on that flat portion is not suitable? Well, then we're faced with moving the house back toward the road and rethinking the driveway. Of course we also need to set aside space for a detached garage we might want someday.

that, even though they are on our side of the line, the owner of the cottage next door might rather not see cut down. We want to be good neighbors. At any rate, most likely, we'll have a test pit dug there. If that site passes the soil test, then maybe we can build on our preferred spot after all.

So tomorrow will be an interesting day. Quite possibly we'll be left with options that fall short of our ideal scenario. And if so, we'll need to make accommodations. I'll report on the results in a future column. ■

# Rock Solid.

An essential characteristic of a quality septic tank.



**Precast concrete is the only choice for superior and reliable septic tanks.**

Precast concrete septic tanks offer a long and low-cost service life, are easy to install and readily available throughout the U.S. and Canada. The self-weight of precast concrete septic tanks also helps resist buoyant forces in saturated soils.

For quality, value and permanence, choose precast concrete.



**NPCA**

Precast ... The Concrete Solution

To find a local supplier or to learn more about precast concrete septic tanks visit [www.precast.org](http://www.precast.org) or call 800.366.7731.



Greg Thompson, an owner of Thompson Septic Systems, digs the lateral line using an excavator with a laser transit attached to boom. (Photography by Weasie Gaines)



# Quality to No End

**A commitment to excellence means growth by word-of-mouth alone for a two-generation installation business in northern Kentucky**

**By Gil Longwell**

## **Thompson Septic Systems, Smithfield, Ky.**

**OWNERS:** Greg, Sherry and Matt Thompson

**YEARS IN BUSINESS:** 29

**MARKET AREA:** 50-mile radius

**SPECIALTY:** Onsite system repair and installation

**EMPLOYEES:** 3

**AFFILIATIONS:** Kentucky Onsite Wastewater Association



**M**att Thompson remembers the day he found out his father, Greg, was serious about quality. "My dad fired me because I did not meet the standards for a Thompson Septic Systems employee," he says.

He and his father laugh about it now, but at the time it was serious business. "Dad is extraordinarily particular," says Matt. And he now knows his dad did the right thing. Because he learned his lesson, someday, he will own Thompson Septic, which Greg and Sherry Thompson started 29 years ago in Smithfield, Ky.

A successful tool and die maker, Greg got a bug to buy a backhoe, and did so in 1981. "Not long after I bought the machine I said to myself, 'Look what I have — what do I do with it?'" he recalls. With the local health department's guidance, he installed an experimental

system for a house that he was building himself. That was his first onsite job experience.

Today the company installs dozens of onsite systems per year, repairs many more and does general excavation.

### **A side job**

For 12 years, he installed and repaired onsite systems as a side job. Nights and weekends, when he wasn't on his machine working, he was telling friends and strangers about his business. The informal marketing approach was successful, and a friend hired him to install a system for his new house. "All our promotion has been by word-of-mouth," he says. "We have never advertised in any other way, and we have never been without work."

The first jobs were close to home, but today Thompson Septic serves customers from seven counties in a

50-mile radius from Smithfield, about 20 miles east of Louisville.

In the early days, learning was constant, and he plans to keep on learning new products and techniques as long as he is in the business.

"Dad is a workaholic, for whom the right way is the only way to do a job," says Matt. "If he encounters a problem he is unfamiliar with, he will search for and learn what he needs to know to do the job right."

Side work and a full-time job created a hectic work pace, and the deaths of two relatives forced Greg Thompson to look at his schedule and choose between his tool and die job and his onsite business. The morning after he made his decision, he gave notice at the factory and became a full-time installer.

### **Controlling destiny**

Greg Thompson believes bigger does not equal better. He has inten-





Greg, Sherry, and Matt Thompson

**"Dad is a workaholic, for whom the right way is the only way to do a job. If he encounters a problem he is unfamiliar with, he will search for and learn what he needs to know to do the job right."**

**Matt Thompson**

tionally kept control of his success and the destiny of his business through direct involvement with every aspect of every job. In his first year, he got so busy, so fast that he hired his brother-in-law as an equipment operator. That gave him flexibility to do more promotion and related off-site work.

All the Thompsons agree that Greg's success came from his mechanical aptitude and his ability to observe, evaluate and identify workable solutions to complex problems. Transferring these skills to onsite systems and their electrical and mechanical components was a smooth transition.

He looked at his installation business as a route to a higher income than he could earn working for someone else. He also knew it was not an eight-to-five job. Walking away from one of his jobs had the added value of being a stress reliever.

It was in 2003 that Greg first

hired and then fired Matt. Matt worked for a time on someone else's backhoe and in related building trades.

"I even went to technical school in Phoenix, where I learned how to maintain mobile electronic equipment," Matt says. He quickly learned that being an employee had its limitations. "I realized I was not going to make what I wanted," he says. "I also realized that the family business was right there waiting for me."

The firing incident was soon forgotten: Greg welcomed Matt back into the business in spring 2006.

### Team of three

Locally, Sherry Thompson is known as "Bobcat Betty," a nickname she is proud of. She has always been active in the business. When kids came along, Sherry's mom babysat Matt and his sister so Sherry could work in the field beside Greg.

"I've just always done it," she says. "I have never felt lost in a man's world." When she shows up on a job site to run a machine, the men who do not know her will stop and watch, but not for long.

"They quickly recognize that she knows what she is doing and that she can do it as well as any man," says Greg. Today, Sherry handles the bookkeeping and office duties. Still an adroit Bobcat operator, she enjoys sitting behind the controls when the opportunity presents.

## Great Expectations

To stay competitive, the principals of Thompson Septic Systems meet with builders almost whenever the builder wants. Often, the meetings are not between eight and five.

Builders call and ask them to lay out a system "after work" so they can secure a building permit the following day, know where not to allow equipment to travel and keep on schedule. "We do our best to accommodate them. It builds our value to them," says Matt Thompson.

Homeowners also like "after work" appointments — that may be the only time they can schedule a meeting. Evening phone calls are common, and many (but not all) problems can be solved by phone. Landowners seeking a system for new construction bring builder-

like last minute requests too.

Repair customers do not appreciate the buried system they cannot see, and they have limited understanding of the work needed to repair or replace a system. They also have trouble envisioning the size of the equipment and the space needed to maneuver it.

"Repair customers expect a fully restored yard; they do not want to see where you have worked or where you have traveled," Thompson says.

Universal questions include: How soon? How long? The expectation is that the Thompsons will get in and get out quickly. "Our service is quality to no end," says Thompson. "We will not drop the customer's ball."

Matt, 24, is a former state high school wrestling champion, and is well known in the community. He is less known in onsite circles. "I have a good rapport with our customers, but some builders dad has worked with for a long time still ask for him," he says.

Greg says, "The builders know me, we have worked together for a long time, and I look older. I've been asked not to send Matt to some jobs, but I tell them, 'He will tell you the same thing I will.'"

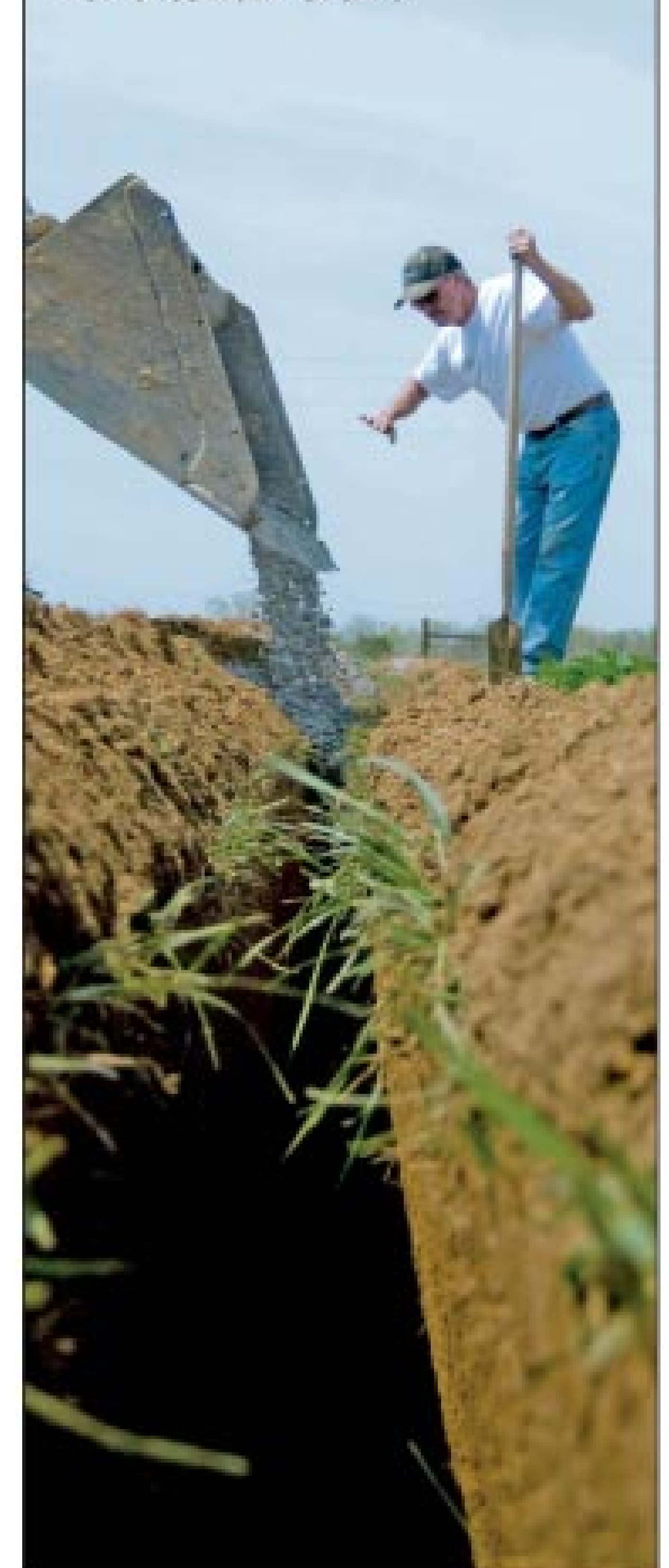
Matt's experience in the industry has built his confidence and his acceptance by others. His dad points out, "It takes time to gather the common sense that lets you succeed. When onsite installers gather, I'm usually older than most and Matt is younger than most."

To help Matt grow, Greg hangs back, taking a mentor role. "Matt makes his observations, then gives me his diagnosis and plan of attack. We discuss it and he takes the lead in the field."

### Problem-solving teamwork

When a homeowner calls with a problem, Greg follows a routine, interviewing the caller to gather basic system information. About 25 percent of the time, he can solve

**Greg Thompson directs son Matt in placing crushed rock for a curtain drain.**







Greg Thompson likes to keep his shop and his parts and supplies inventory well organized.

the problem over the phone. "A large portion of our calls deal with tripped-out breakers that protect pumps," he says. "I help the homeowner diagnose, then solve his problem."

The downside of this approach is that Greg doesn't charge for the solution — but he's OK with that. The calls build a bridge of trust and generate positive feelings, and they are the fuel that drives positive word-of-mouth for Thompson Septic. When a trip to the site is necessary, he is better informed and will definitely have the needed job-specific parts on board.

Greg first evaluates their situation. "In a forthright conversation, I explain the problem and suggest the solution I feel is best, one which can likely be permitted," he says. "I offer a price estimate, and then seek their permission to discuss the matter with the health department." The conversation helps the homeowner understand the process, get an idea of the cost, and share ownership in the solution.

### Diagnosing malfunctions

Repairs, other than pump failures, are the biggest challenge. Finding the malfunction is the starting point toward discovering why it occurred. After ruling out electrical and mechanical causes, the Thompsons look into the



Matt Thompson installs 4-inch perforated pipe in a lateral trench.

**"We are doing things we never did before to stay busy and get paid for a day's work. That is a lot better than having no work and no income."**

Greg Thompson

absorption area and evaluate the soil-aggregate interface.

"We use a hand auger and look for a biomat-impaired soil interface," says Greg. "This is a common cause of failure for absorption areas with over 25 years of service," says Greg. If there is no biomat problem, they look for and eliminate or validate other potential causes.

Curtain drain discharge points can give clues about groundwater's influence on the drainfield. These drains, installed upslope, carry intercepted groundwater around and downslope from the drainfield.

Drains are installed by excavating a 12-inch-wide trench 3 or 4 feet deep, then placing a perforated pipe on a few inches of coarse aggregate and backfilling nearly to the surface with more coarse aggregate. When water moving downslope encounters the aggregate, it moves down to the pipe and is carried away. Curtain drains discharge to the surface, and examining the discharge sites gives insights about groundwater's impact on the system.

Another tool for diagnosing groundwater's affect is baking flour. "It is nearly impossible to recognize water's movement in a drop box or a distribution box," says Greg. "Dropping flour onto the water's

apparently motionless surface quickly reveals the water's direction of flow."

The Thompsons tried dead leaves, blades of grass and twigs for this purpose until one day Sherry suggested flour. Now, they carry small bags of flour on all of the trucks.

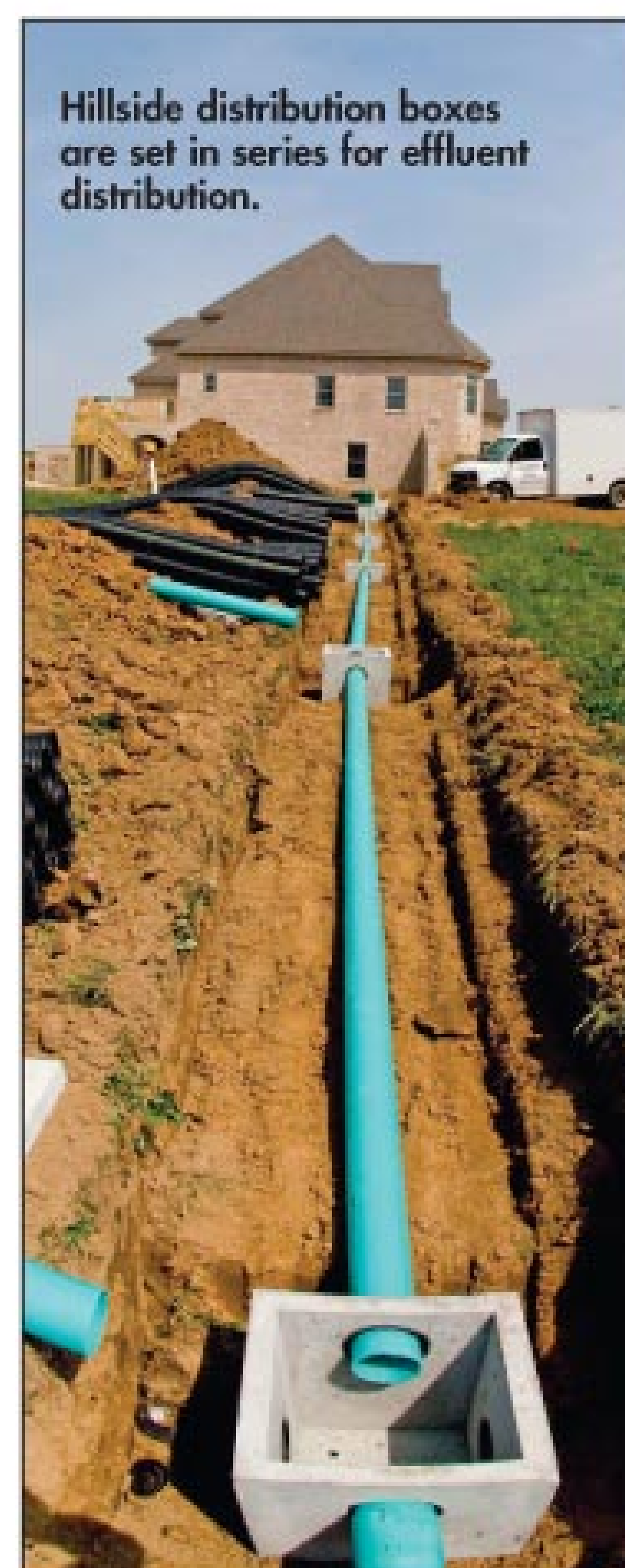
Once they diagnose the problems and select a repair solution, it usually must be permitted by the health department under Kentucky's statewide onsite regulations.

### Prepared for success

"When we arrive on site we are prepared for the job at hand," says Sherry. "Everyone knows their tasks, and there is no confusion."

The equipment pool is carefully selected to eliminate duplication of effort and maximize productivity. In addition to a 2007 Bobcat T180, the Thompsons rely on a 1998 Case 580 L backhoe, a 1990 3500 Ditch Witch trencher, a FINN Corporation straw blower and two dump trucks. A custom-designed 2006 Chevy box-body truck is a warehouse on wheels, carrying a complete set of parts and all hand tools, while also providing a sheltered workspace.

The Thompsons prepared for the economic downturn with a willingness to do more general excava-



Hillside distribution boxes are set in series for effluent distribution.

tion and to take a hard look at every opportunity that comes to them. Two years ago, they installed about 80 systems, but last year that number was down more than 40 percent.

"We are doing things we never did before to stay busy and get paid for a day's work," says Greg. "That is a lot better than having no work and no income."

As he prepares for retirement, Greg's goals have changed. "My goal is to get smarter and smarter so that I can retire and Matt will hire me," he says. In the Thompson family, learning is preparation, and it never stops. It is essential for growth and success and a value taught by one generation to the next through a relationship marked by mutual respect, trust and love. ■

### MORE INFO:

**Bobcat**  
866/823-7898  
[www.bobcat.com](http://www.bobcat.com)

**Ditch Witch**  
800/654-6481  
[www.ditchwitch.com](http://www.ditchwitch.com)



# Orenco® Onsite Products

**Built** to work together. **Built** for the job. **Built** to last.



## Risers & Lids

- Risers that don't deform
- Lids that don't warp or collapse
- Standard and custom sizes
- All parts watertight



## Filters & Pump Vaults

- Filters that go longer between cleanings
- Pumps that last for decades
- Pump vaults for any kind of tanks
- Complete pumping systems

## Controls

- Complete panel kits with floats
- Touch-safe controls
- Name-brand parts
- Resettable breakers
- Long-lasting contactors, millions of cycles
- UL, UL-C, CE listings; UL Type 4X rating



**Orenco Systems®**  
Incorporated

*Changing the Way the  
World Does Wastewater®*

**1-800-348-9843**  
**www.orenco.com**

**Orenco® Onsite:**

*Why trust your job – or reputation – to anyone else?*

*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](mailto:ander045@umn.edu).*

# Passing Muster

**Onsite system inspections are becoming more common. Here are five steps to follow to complete a thorough, professional system evaluation**

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

**I**n past columns we discussed installing for management and described things to look for when troubleshooting a system. However, as we like to say, maybe we should take half a step back and highlight that as an installer you are often asked to evaluate systems because they are having trouble — and then are asked to provide the fixes.

In addition, more installers are getting involved in real estate transfer inspections. So maybe now is the time to discuss standards for a thorough and complete system inspection.

As many of you know, we teach inspection classes for the National Association of Wastewater Trans-

porters (NAWT). They have an inspection form and a very nice inspection manual that goes through all the procedures. You can get the form from the Web site at [www.nawt.org](http://www.nawt.org).

In any case, the key is to follow some type of form or procedure consistently so that all the bases are covered. When we talk about a form here, we are referring to the NAWT form. If your state or local permitting authority has a form you are required to follow, that is great — just make sure it covers all of the information you need to gather.

An inspection likely focuses on the current use of the system, whether any changes will occur when the property changes owner-

ship, or whether the current owner plans to make any changes to the house by the current owner. Here are the basic procedures to follow in a typical inspection.

## **Step 1: Current and future use**

Gather all available data and details about the system. This includes local permits, information on soils in the area, a review of any other information at the planning and zoning office and a homeowner interview.

The first page of many forms includes information to be supplied by the homeowner: This will provide insight into water use habits within the house and will give you clues about what to look for when you open parts of the system.

For instance, if there is an in-home business such as a day care center, that could indicate increased flow and solids coming into the system. Ask about the age of the system and whether there have been any repairs or upgrades since installation. This will provide clues to the type and condition of the system.

Determine if there has been a previous inspection. Ask if the system has been regularly maintained, as that indicates how well the system has been cared for.

## **Step 2: Pretreatment devices**

Obtain the site map and locations of system components from the zoning or health department if



**Opening the septic tank and inspecting the baffles is an important part of a complete system inspection.**

they are available. Discuss with the owner and clearly establish the property lines. Also, since you will be digging, make sure all the utilities are located by contacting your state one-call service.

If you need to do locating because there are no records or the owner does not know where the system is located, highlight that the inspection does not begin until the parts are located and that there is a separate fee for locating. Remember; you should establish and keep good records as you do the locating, because more than likely you will be back at the site in the future. So the documentation and the records are more important for you than for anyone else.

## **Step 3: Soil treatment system**

All components of the system should be opened and evaluated for their operation. Make sure all the



**The soil treatment area, in this case an elevated mound system, must be inspected for evidence of surface seepage.**



flow from the residence is collected in the tank. This may require the use of dye to indicate that the connection is secure.

The septic tank should be opened and pumped. Before pumping, evaluate the accumulation of sludge and scum and note any signs of previous backups within the tank. Such signs include toilet paper over the baffle or a line above the outlet elevation in the tank.

Add water downstream from the tank to make sure that effluent flows the way it should and does not back up into the tank or come out at the ground surface. After pumping, evaluate the tank for structural soundness, the presence and condition of the baffles, and any evidence that the tank is not watertight, such as root penetration.

Open and inspect the distribution or drop boxes. Again, note any evidence of solids carryover from the tank, as this could also indicate plugging problems in the soil treatment areas. Again, the boxes should be watertight — the presence of roots or of sediment that

**Clearly establish your recommendations for changes, repairs or upgrades. There should be enough detail so that if a question arises in the future, it can be verified for accuracy and used to guide decisions about repair or replacement.**

has run in with surface water would indicate problems.

Confirm the structural integrity of the distribution or drop boxes. Opening the boxes can help you establish the water level in the trenches or bed, and that will indicate how much of the system the current residents are using.

Walk the soil treatment area and probe it to determine water levels in the trenches or bed. Look for any signs of current or previous failure. Indicators of failure would be effluent coming to the surface, areas of lush green vegetation, areas of dead or decaying vegetation, odors or other evidence of sewage.

#### **Step 4: Other system components**

Inspect any other system components such as media filters (sand,

peat or textile fabric), aerobic treatment units, constructed wetlands or others. Each of these has special operating conditions that need to be checked to determine if they are operating properly.

This step may require some contact with the manufacturer's representative to determine how the system is supposed to operate. Once you have determined this, you can provide that information to homeowners as an additional service to aid their understanding of the system.

#### **Step 5: Paperwork**

Complete all necessary paperwork. Make sure the form you followed is filled out completely. If you have comments on the components, be sure they are clear and



**Other system components, such as the pump tank and pump controls, also need to be inspected.**

concise and that the homeowner understands them.

Clearly establish your recommendations for changes, repairs or upgrades. There should be enough detail so that if a question arises in the future, it can be verified for accuracy and used to guide decisions about repair or replacement.

We hope this short summary gives you an idea about what a complete inspection should involve. Good luck with your next inspection! ■



## **Presby Environmental Proudly Announces...**

### **Advanced Enviro-Septic™**

*See why Advanced Enviro-Septic™ is sweeping the onsite wastewater treatment industry!*

- **Removes up to 99% of wastewater contaminants**
- **Passive/non-mechanical**
- **Minimal expense**



SPD & CTD Models  
Certified to NSF/ANSI  
Standard 40, Class I



**Made in USA**

**Visit us at:**

**[www.PresbyEnvironmental.com](http://www.PresbyEnvironmental.com)**

**800-473-5298**

### ***The Next Generation of Wastewater Treatment***

# Clean Solutions, Clear Results



- NSF Standard 40 Certified
- Perfect for substandard soils
- Minimal operating cost
- Easy installation and maintenance
- Five year limited transferable warranty
- Over thirty years of manufacturing experience



1-800-370-3749 • [www.hydro-action.com](http://www.hydro-action.com)



**NEW**  
Seal-R Ring  
Sizes:  
12", 15"  
& 36"

**Seal it Tight!**  
**Seal it Easy!**  
**Seal it Fast!**

- Easy 10 minute installation!
- Secure fit for all systems!
- Made & sold by septic installers!
- Prevent ground water infiltration and save money at the same time!



Apply foam sealant to tank.



Place ring over opening and apply foam.



Place plastic maintenance pipe on ring.



Install lid.

**For more information, call us today!**

**BrenLin Company, Inc**  
Manufacturers of Seal-R™ Products  
Herman, MN

**888-606-1998**

Fax: 320-677-3001 • E-mail: [brenlin@frontiernet.net](mailto:brenlin@frontiernet.net)

[www.seal-r.com](http://www.seal-r.com)

**Are you tired of using risers that are too tall or too short for the job you are completing?**

Plastic riser pipe will give an exact height each time. Try our system and you will never have to carry concrete pipe and lids again. Save time by not having to assemble multiple sections.

- Seal-R™ Lids** Available in 12", 15", 18", 24", 30", 36"
  - Seal-R™ Rings** Available in 12", 15", 18", 24", 30", 36"
  - Inner Safety Lids** Available in 18", 24"
- Seal-R™ Lids can be personalized

## INDUSTRY **news**

July 2010

### Ohio Offers Online Septic Forum

The Ohio Septic Forum is an online tool that enables onsite installers to share information with others in their profession. The forum is subdivided into various subject areas, including soils and onsite systems, conventional systems, alternating systems, system troubleshooting, legislation and rules, upcoming educational opportunities and more. Onsite professionals can view and join the forum by visiting [www.ohiosepticforum.com](http://www.ohiosepticforum.com).

### Zoeller Chosen Preferred Vendor for Extreme Makeover

Zoeller Pump Co. has been selected as a preferred vendor to work with upcoming build projects for the ABC reality show *Extreme Makeover: Home Edition*. The program chose a Pro Pak 53 sump pump and battery backup pump combination for a home built in Bloomington, Ill.

### Osprey Adds New Facilities in Sarasota

Osprey Biotechnics Inc. is doubling its office and manufacturing space at its facilities in Sarasota, Fla. The tailored bacteria and fungal products company is moving its shipping, accounting, blending, bottling and fungal laboratories to a new building in the Northgate development. The facility is expected to employ up to 35 within three years and will occupy 20,000 square feet.

### SJE-Rhombus Offers Quick Ship Panel Program

The Quick Ship VFD Panel Program from SJE-Rhombus provides 48-hour delivery of variable-frequency drive panels specifically designed for irrigation pump pressure control applications up to 125 hp. Each panel has a ventilated NEMA 3R enclosure, VFDC-1300 controller and pressure transmitter.

### Wastewater Eco-Charities Assists Low-Income Households

Wastewater Eco-Charities is a nonprofit company providing septic solutions and basic education for low-income households in the U.S. Its mission is to promote environmental responsibility through education and advocacy to low-income households, including qualified senior citizens, veterans, disabled and handicapped. In addition, the group hopes to provide basic septic repairs and system remediation, as well as like-kind system component replacement and engineer-designed failed system replacement. For more information call 888/757-8671 or visit [www.wastewaterco.bbnw.org](http://www.wastewaterco.bbnw.org).  
owner is entitled to the refund amount of the system. ■

# onsiteinstaller.com

- > Classifieds
- > Used Equipment
- > E-zines
- > Product Categories



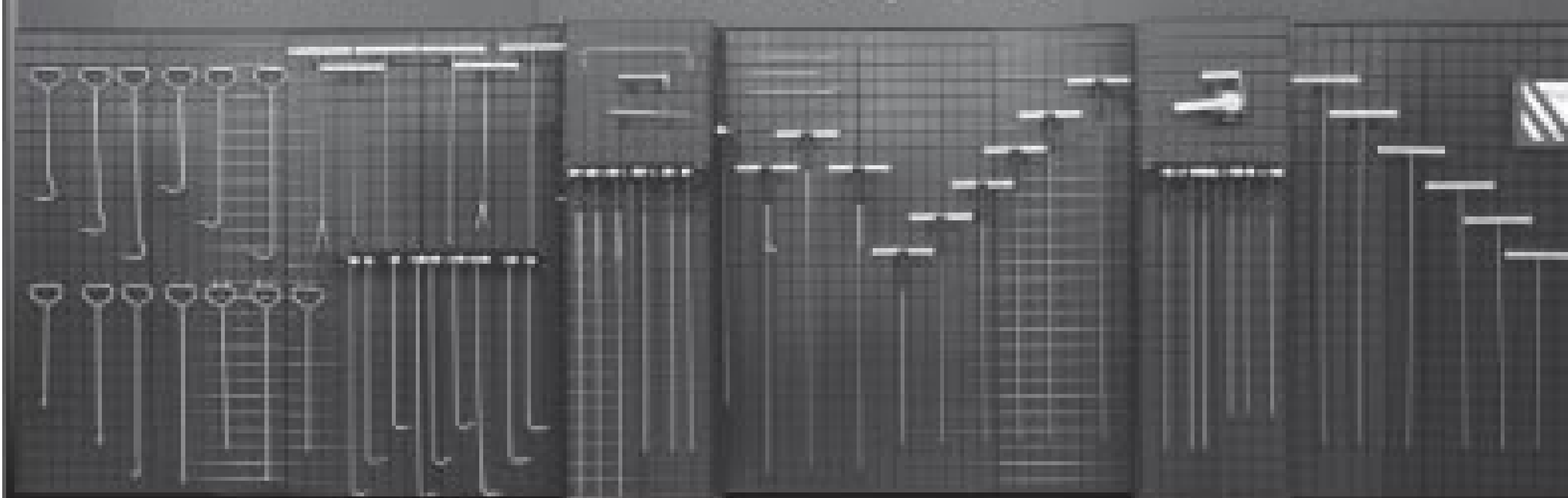


**T&T Tools, Inc.**  
**800.521.6893**

Probes & Hooks

**T&T Tools, Inc.**

Probes & Hooks



### Hooks...

- Heat treated for long life
- Manhole Cover Hooks
- Septic Tank Lid Hooks
- Many styles available
- "T" handles for two hands or compact "D" handles

### Probes...

- Insulated, Standard and Specialty
- Metal shafts: 3/8 round or hex
- Replaceable hardened tips
- Optional "slide" available to make your probe a mini-slide hammer

**Call for a FREE Catalog**

Email: [sales@tandttools.com](mailto:sales@tandttools.com)

Fax: 800.521.3260

**Champion Pump**

SUMP EFFLUENT,  
SEWAGE & GRINDER  
PUMPS



- Maximum Total Heads to 123 Feet
- Maximum Flows to 170 GPM
- Cast Iron Construction
- Quick Disconnect Power Cord (Available up to 50')
- Single or Double Seal Configuration
- Extended Warranties Available

**Champion Pump**

BETTER PERFORMANCE  
BETTER QUALITY  
BETTER VALUE

**800.659.4491**  
[WWW.CHAMPIONPUMP.COM](http://WWW.CHAMPIONPUMP.COM)

**NEW IFS C-LEVEL™ SENSOR**

## Innovative FLOATLESS Technology

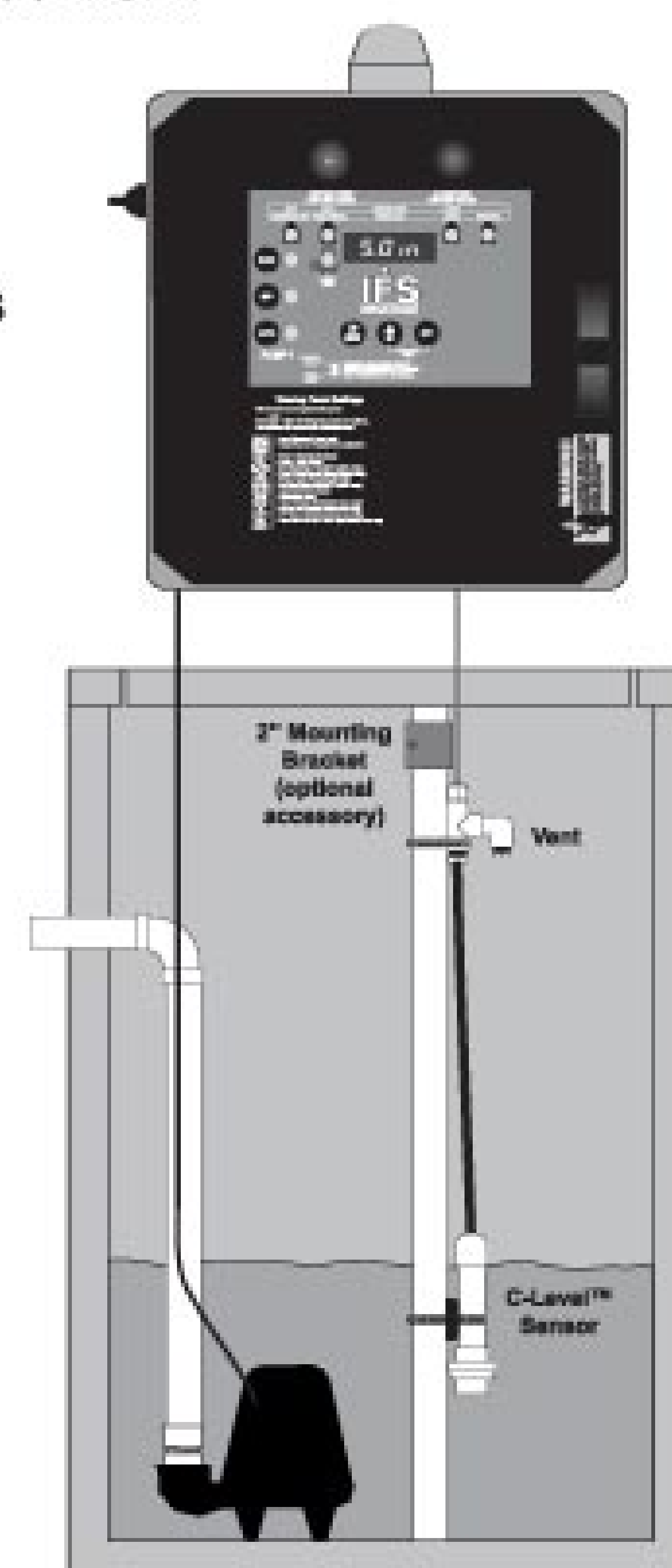
**SJE-Rhombus® introduces the C-Level™ Sensor for use with select Installer Friendly Series® panels.**

The simple and accurate C-Level™ sensor converts water pressure in a tank into a **low-voltage electrical signal** and sends it to the IFS control panel, which displays this level (in inches or centimeters) for **easier constant level monitoring** of the system. Pump activation and alarm levels can be adjusted using the **IFS panel touch pad**, eliminating the need to go into the tank for manual adjustment.

### C-Level™ Features:

- Compact design works well in confined space applications
- Operates on low-voltage
- One sensor can take the place of up to 4 floats
- Easy to install and adjust set points
- Works with select IFS panels:
  - IFS Single Phase Simplex Demand/TD
  - IFS Single Phase Duplex Demand/TD
  - IFS In-Site® Simplex Event Monitoring
  - IFS In-Site® Duplex Event Monitoring
- Three-year limited warranty
- Patent pending

**Watch an introductory video on the C-Level™ floatless sensor at [www.sjerrhombus.com](http://www.sjerrhombus.com)!**



*Float tree not included.*

**SJE Rhombus®**

**1-888-DIAL-SJE (1-888-342-5753) ■ Fax: 218-847-4617**  
**[www.sjerrhombus.com](http://www.sjerrhombus.com)**

*Machine Matters is designed to help readers get the most from excavators, backhoes, skid-steers and other mechanical equipment through proper maintenance, operation and financial practices. Readers are welcome to submit ideas for this column and can send them to Ted J. Rulseh, editor, by calling 800/257-7222 or e-mailing [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).*

# Nowhere to Turn?

**These compact excavators are titanic time-saving tools when a job forces you to work around obstacles or on postage-stamp-sized properties**

By Greg Northcutt

**C**ompact excavators may not have the muscle of a loader/backhoe or a mid-size excavator. But these nimble machines aren't as big or heavy, or as hungry for fuel.

That means they can go places — like small backyards, existing landscapes, and across wet or muddy areas — where the bigger machines can't, and take on all kinds of digging, loading and grading work when speed and agility will make you more money than sheer brawn.

"Their overall versatility allows compact excavators to be used in many applications and essentially keeps them running while on a job site, regardless of conditions," says Curtis Goettel, marketing manager for Case Construction Equipment. "They can pay for themselves quickly and operate at low cost per hour during their life cycle. In the end, contractors can charge less to the customer and put more profit in their pockets."

Most compact excavators come with a hydraulically controlled blade for use in backfilling trenches and for grading small areas. The latest models offer a number of design and technological advances to make work easier while boosting productivity.

"Center-swing booms allow the unit to dig or operate attachments directly parallel to building foundations, fences or other obstacles," Goettel says. "Two-speed transmissions give them faster ground speed. Zero-tail-swing allows operation near obstacles."

"Joystick pilot controls and proportional-flow hydraulics provide smooth and intuitive control of the excavator and any hydraulic attachments while reducing operator fatigue. Cabs with heat, air conditioning, radios and heated suspension seats increase operator comfort. That means you spend more time in the seat working and making money."

Here's a sampling of current models:

## Bobcat E42

Equipped with a 41.8 hp liquid-cooled diesel engine, the 9,246-pound conventional-tail-swing E42 joins the Bobcat M-Series line of compact



**Bobcat E42**

excavators. The standard-arm version provides a digging depth of 126.2 inches, while the long-arm machine digs to 138 inches.

Bucket breakout force is increased by a load-sensing pump and closed center-valve system, which improves control of machine travel and work-group operation, and by re-engineered boom geometry. Cushioned work-group cylinders offer smooth, precise end-of-stroke control. A thumb switch on the left joystick makes operation of the swing boom easy.

An in-track swing frame keeps the swing castings and cylinders within the width of the tracks when digging in an offset position, improving operation when digging flush against an obstacle. A TOPS/ROPS canopy with high-back suspension seat, retractable seat belt, cup holder, adjustable armrests and lockable toolbox are standard. **800/743-4340; [www.bobcat.com](http://www.bobcat.com).**

## Case CX

Case Construction Equipment has upgraded its compact excavators with Tier 4 certified engines for more efficient power and faster cycle times and a three-post ROPS for easier entry and exit and better visibility. Joystick pilot controls and proportional-flow hydraulics provide smooth control of the machine and hydraulic attachments, while variable controls let operators use either hand to operate the bucket or dipper.

With a tap on a button, the one-touch decel-



**Case CX**



**Caterpillar 308D CR SB**

erator instantly drops engine speed to idle, making it easier to talk with ground personnel. Another touch returns the engine to the previous rpm. Users can reach service and maintenance points from the ground. The four models — the CX27B, CX31B, CX36B and CX50B — range from 5,566 to 10,261 pounds. Delivering from 21.3 to 39.8 net hp, they offer maximum digging depths from 8 feet, 4 inches to 11 feet, 9 inches. **866/542-2736; [www.casece.com](http://www.casece.com).**

## Caterpillar 308D CR SB

Caterpillar offers 10 mini-excavator models, ranging from 18.1 to 55.6 net hp, and from 3,549 to 18,519 pounds. Among the newest and largest is the 308D CR SB. The compact radius design,





**JCB 8085ZTS**



**Komatsu PC35MR-3**



**Takeuchi TB138FR**



**Terex TC35**

with just a 6-inch tail-swing overhang, offers more versatility in confined areas. The swing boom lets users trench parallel to tracks, dig close to fences, walls and buildings and dig a box-section with-



**Yanmar ViO55**

out repositioning the undercarriage.

The machine digs down to 15 feet, 6 inches and has a maximum ground-level reach of 24 feet, 5 inches and a bucket breakout force of 13,489 pounds. An economy mode reduces fuel consumption in light-duty applications, while maintaining high bucket forces and lift capacity. A boom and stick regeneration circuit saves energy during boom-down and stick-in operations. 309/675-1000; [www.cat.com](http://www.cat.com).

#### **JCB 8085ZTS**

The 8-ton zero-tail-swing 8085ZTS is the largest of the 10 JCB compact excavators. An Isuzu Tier 3 turbo engine provides more power, torque and productivity, and boosts fuel efficiency more than 25 percent. Optional electronic proportional auxiliary controls improve attachment control.

The Advanced Management System's LCD display shows fuel level, hydraulic and water temperature and operational details, like hours run and error messages. It also lets the user choose among light, standard, and heavy digging modes and provides self-diagnostics.

Tracks include the standard 17.7-inch triple grouser steel tracks and optional 23.6-inch steel tracks, 17.7-inch rubber tracks and 17.7-inch Geogrip rubber pad tracks. Daily maintenance points and hydraulic test ports are under the rear hood, and the excavator valve block has been moved to the right side of the engine compartment, reducing maintenance time. 912/447-2000; [www.jcbamericas.com](http://www.jcbamericas.com).

#### **Komatsu PC35MR-3**

The 28.9 hp Komatsu medium-swing-radius PC35MR-3 excavator has an operating weight of 7,909 pounds and a maximum dig depth of 11 feet, 4 inches. The standard thumb mounting bracket and auxiliary hydraulics simplify hydraulic thumb installation, and the optional Power Angle Blade lets users angle the blade 25 degrees right or left.

The machine has the Komtrax fleet monitoring system, which uses wireless technology to send machine operation data such as operating hours, machine location and fuel levels to a secure Web site for analysis. The cab features include easy entry, fully adjustable suspension

seat with retractable seat belt, and pilot proportional joystick controls. The X-track frame prevents dirt and debris buildup and a single, large-diameter swing pin enhances the durability of the swing boom mechanism. 866/513-5778; [www.komatsuamerica.com](http://www.komatsuamerica.com).

#### **Takeuchi TB138FR**

Takeuchi offers the zero-tail-swing TB138FR. This 8,995-pound excavator has a digging depth of 11 feet, 3 inches, a maximum reach of 17 feet, 9 inches at ground level, and a bucket breakout force of 8,995 pounds. The side-to-side offset boom system combined with the zero-tail-swing lets the machine slew 360 degrees only inches beyond the track width.

A low center of gravity offers the stability and craning capacities of conventional excavators. The hydraulic system has a large-capacity cooler and variable-displacement piston pumps to make more efficient use of engine power while adjusting power and speed for fast cycle times. An electrohydraulic push-button and proportional slide switch on the left joystick provide precise control of auxiliary hydraulics. 706/693-3600; [www.takeuchi-us.com](http://www.takeuchi-us.com).

#### **Terex TC35**

The 32.5 hp, 7,980-pound TC35/TC35E is one of 10 Terex compact crawler excavators, ranging from 18 to 94 hp and from 3,638 pounds to 28,219 pounds. This model digs to 11 feet, 8 inches and has a maximum reach of 18 feet, 9 inches. It has multi-function operation and an auxiliary hydraulic circuit with open (pressureless) return for flexibility in adding attachments.

The offset boom design with built-in swing gives operators excellent visibility and enables the machine to work in tight areas next to buildings and foundations, including parallel-to-wall jobs. The boom cylinder is mounted on the back of the boom to protect from impacts with loads, and ground-level access to the engine, drive train and hydraulics speed maintenance. The cab includes a suspension seat and adjustable armrests. 662/393-1800; [www.terex.com](http://www.terex.com).

#### **Yanmar ViO55**

No part of the housing of the 11,312-pound Yanmar ViO55 extends beyond the tracks. The combined flow of three hydraulic pumps lets users turn the house while also operating the boom and arm. The machine digs to 13 feet, 8 inches and reaches 20 feet, 4 inches.

The hydraulic quick coupler lets operators attach and remove buckets while seated in the cab, except for fitting and removing the safety lock pin. It adapts to most bucket pin sizes and spreads. Other features include joystick pilot controls, protected boom light, and double acting/single acting hydraulic PTO. The optional angle blade has a float position, and a switch on the blade lever allows angling of the blade while lifting and lowering it. 847/541-1900; [www.yanmar.com](http://www.yanmar.com). ■

"Rules and Regs" is a monthly feature in Onsite Installer. We welcome information about state or local regulations of potential broad interest to onsite contractors. Send ideas to [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).

# Minnesota Community Seeks Remedy for Failed Systems

By **Scottie Dayton**

**T**he city council in Ham Lake, Minn., hired a contractor to analyze 143 onsite systems and 36 potential sewer system sites in two lakeside communities, then determine the best long-term solution for the failed systems.

The options were replacement if new systems could fit on the sites, building a decentralized facility, or extending sewers. The inspections would include soil borings and pumping of septic tanks to assess if they are watertight. The council will use the community assessment report to make its decision in fall.

## Wisconsin

Two rule packages proposed by the Department of Natural Resources could prevent septage haulers from unloading at municipal wastewater treatment plants and restrict land application of septage.

One rule change would require treatment plants to reduce their phosphorus discharges. According to DNR estimates, as many as 160 treatment plants could be affected, and the total cost of improvements to treatment systems could run to \$1.3 billion. Not accepting septage would be one way for plants to

reduce phosphorus levels.

The other proposal rule would require more nutrient management planning at nonpoint runoff sources. If it were passed, farmers implementing such plans could refuse land-applied septage.

The 2009-10 legislative session ended with lawmakers passing a two-year delay in requiring counties to conduct inventories of onsite systems maintenance programs.

## Nevada

Lyon County received a \$75,000 Community Development Block Grant for its Dayton Septic Tank Reduction Program. The grant will fund a preliminary engineering study and design to abandon more than 800 septic tanks and connect the properties to municipal sewers. The conversion anticipates a legislative mandate that would require decommissioning of septic tanks in areas with high nitrate levels in the groundwater and potable wells.

## Missouri

An effort by the Springfield City Council to connect all city homes to the municipal sewer is nearly complete. Only about 500 homes,

nine churches, and 233 vacant lots remain off the sewers, representing about 2 percent of the system.

## Florida

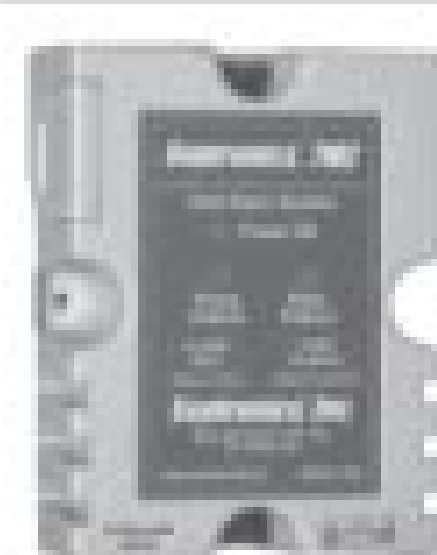
Increased inspection requirements for septic tanks near Florida Springs cleared the Senate Ways and Means Committee. The bill would require inspections every five years for the state's 2.6 million septic tanks by 2016. Residents would be able to hire any licensed contractor.

## Virginia

Emergency Alternative Onsite Sewage System Regulations were approved by Governor McDonnell on April 6 and are now in effect. The rules require licensed contractors to operate and maintain advanced treatment systems under a contract. Homeowners must keep a copy of the operator's log and O&M manual on the property and make a reasonable effort to transfer the materials to future owners. ■

## When You Do The Job Right

You will Be Happy  
Your Customer Will Be Happy  
And That Is a Good Day!!!



Single Alarms  
Dual Alarms

Nema 4X  
Junction  
Boxes



Pedestal Pump  
Controls/Alarms



Low Profile Pump  
Controls/Alarms



Float Switches

Have A Good Day  
Buy **Septronics® Inc.**

Junction Boxes, Alarms, Pedestals, & Pump Controls

[www.septronicsinc.com](http://www.septronicsinc.com)

Ph: 262.567.9030 • Toll Free: 888.565.8908

**Pumper**

THE LIQUID WASTE INDUSTRY'S  
MUST-READ PUBLICATION SINCE 1979  
[www.pumper.com](http://www.pumper.com)



## Sore Back?

A durable plastic septic lid that fits plastic and concrete risers

**THE DUEL POWER LID**

Sizes:  
**18" • 24" • 30" • 36"**

Insulated Lids & Adaptor  
Rings Available



**Fergus Power Products**

1-800-243-7584 Email [fpproducts@prtel.com](mailto:fpproducts@prtel.com) [www.ferguspowerproducts.com](http://www.ferguspowerproducts.com)



# ARE YOU COVERED?

**Don't lose your business and life earnings to spotty insurance coverage**



**The majority of insurance brokers don't know your business as well as we do.**

With an estimated 26 million septic systems serving U.S. residences, there's a considerable amount of work in the pipeline for septic contractors. However, until now, septic contractors haven't had an all-lines insurance solution that would cover all of their business exposure from design and installation to the rental of portable toilets.

To address this need, Sanitation Insurance Services specializes in offering a comprehensive insurance program specifically for septic contractors and portable restroom operators. While some policies provide coverage for pumping or portable toilet rental, our program addresses design, installation, inspection, service and repair, vandalism as well as pumping and portable toilet rental.

You need an insurance program that addresses the specific exposures you face, such as errors and omissions (E&O) coverage for the various services you provide.

**WE HAVE YOU COVERED.**



 **SANITATION**  
INSURANCE SERVICES

**1-877-877-1555**

[www.SanitationIns.com](http://www.SanitationIns.com)

# Running the Ranch

These monitoring, control and alarm systems keep tabs on onsite treatment and help ensure reliable onsite system performance

By Benjamin Wideman



C-Level sensor from SJE-Rhombus



Aero-ALERT from Aero-Stream LLC



Control panels from Alderon Industries

Duplex unit DCU-200 from Premier Tech Aqua



MVP from Orenco Systems



**A**dvanced onsite wastewater treatment requires precise control — over water levels, ATU operation, dosing and more.

Manufacturers offer a wide range of control, monitoring and alarm solutions for a variety of onsite applications. Here is a sampling of the latest from companies that responded to a request for information from *Onsite Installer*.

## Floatless technology

**SJE-Rhombus** offers the **C-Level sensor**, a floatless technology for use with selected Installer Friendly Series control panels. The sensor detects the liquid level in the tank and sends a signal to the IFS panel, which displays the level in inches or centimeters. Pump activation and alarm levels can be adjusted using the touch pad on the inner door of the panel, eliminating the need to go into the tank for manual adjustment. The unit is well suited for confined-space applications. **888/342-5753; [www.sjrhombus.com](http://www.sjrhombus.com).**

## Self-contained power

The multi-function **Aero-ALERT** alarm system from **Aero-Stream LLC** is designed to fit any septic system or holding tank in residential or commercial settings. The design includes a self-contained power cell that simplifies installation and mitigates the need to procure a separate electrical permit.

The installation requires no licensed electrical contractor. The unit can be used in virtually all systems requiring an alarm. It can be remotely located up to 100 feet from the tank. Because it is low-voltage, the cord needs to be buried only inches below the surface. The device uses high-efficiency electronics including a 95 dB audible and a 360-degree flashing visual signal. This allows the unit to emit a continuous alarm for more than 2,000 hours (90-plus days) without depleting the power source. **877/254-7093; [www.aero-stream.com](http://www.aero-stream.com).**

## Multiple configurations

Aerobic environmental **control panels** from **Alderon Industries** provide solutions for many aerobic treatment systems. Options include multiple configurations for alarm beacons, buzzers, float switches, air switches, circuit breakers, 24-hour timers and more. The float switches that come with the control panel are labeled for quick and simple installation. The terminal blocks are easily accessible, and the panels are UL listed. A schematic is laminated on the inside door of the control panel, and an operation and maintenance manual is provided with each control box. **218/483-3034; [www.alderonind.com](http://www.alderonind.com).**



### Peak-flow reduction

**Simplex unit TPA-350** and **Duplex unit DCU-200** from **Premier Tech Aqua** are useful at onsite treatment systems requiring timed dosing with one or two single-phase pumps. The display allows for quick adjustments of the pumping and rest times and gives a complete picture of system utilization. The device allows for peak-flow reduction and control of the influent to the treatment system according to the needs of the installation. It consists primarily of a control panel allowing variable on-off time settings and controlled dosing of wastewater flows to the treatment system. 418/867-8883; [www.premiertechaqua.com](http://www.premiertechaqua.com).

### Expanded data capacity

**MVP** control panels from **Orenco Systems** feature a programmable logic controller with expanded data capacity. The Siemens LOGO! digital programmable logic module, with an LCD display and programming keys, enables service providers to adjust timer settings in the field quickly and accurately. Visual float position indicators, an elapsed-time meter, and counters for alarms and power faults make troubleshooting easier. Panels differentiate high- and low-level alarms and reactivate silenced alarms after 12 hours. 800/348-9843; [www.orencocontrols.com](http://www.orencocontrols.com).

### Fouling-resistant

The **Model 3G** onsite wastewater disinfection unit from **Salcor Inc.** includes fouling-resistant Teflon that requires only annual maintenance, a two-year lamp life, and increased protection against the effects of flooding as demonstrated in a 28-day underwater operation test. 760/731-0745.

### Tracking pump cycles

**PMJB** units from **Septronics Inc.** automatically keep track of how many times the pump cycles. The exterior NEMA 4X junction box pump control is outfitted with a removable terminal board supporting a built-in event counter. Every time the pump engages to pump out the tank, one pump event is added to the counter.

The unit sits on a high-impact poly pedestal to protect the wiring. It also has an area to connect through to the tank, with the pipe nipple and lock-nuts included with the unit. The interior Tankmate pump alarm comes with a control float switch that is wired into the terminal strip on the same pump control terminal board in the junction box. 262/567-9030; [www.septronicsinc.com](http://www.septronicsinc.com).

### Reduces bacteria levels

The **PL-UV1** UV disinfection unit from **Polylok** reduces bacteria levels from secondary effluent to achieve strict water-quality standards. The unit offers dual-pass design, weatherproof electrical components, and a long-life UV bulb. Flow rates are 100 to 8,640 gpd (gravity flow only). 877/765-9565; [www.polylok.com](http://www.polylok.com).

### Indoor/outdoor alarm

The **LB50** indoor or outdoor high-water alarm from **Septic Services Inc.** has a level control and features a warning light, audible alarm, remote alarm for commercial systems, and a three-position toggle switch for operate, silence and test. To install, technicians connect the level control switch to the terminal blocks, then plug the unit into a 115-volt outlet. The unit is fused for circuit protection and has a remote alarm for switches that close on signal (0.4 amps at 115 volts AC). 800/536-5564; [www.septicserv.com](http://www.septicserv.com). ■



Everyone talks about creating  
a greener environment.

You actually do it.

Find the tools you need to keep your communities green at

[www.colepublishing.com](http://www.colepublishing.com). Publishing environmental trade magazines since 1979.

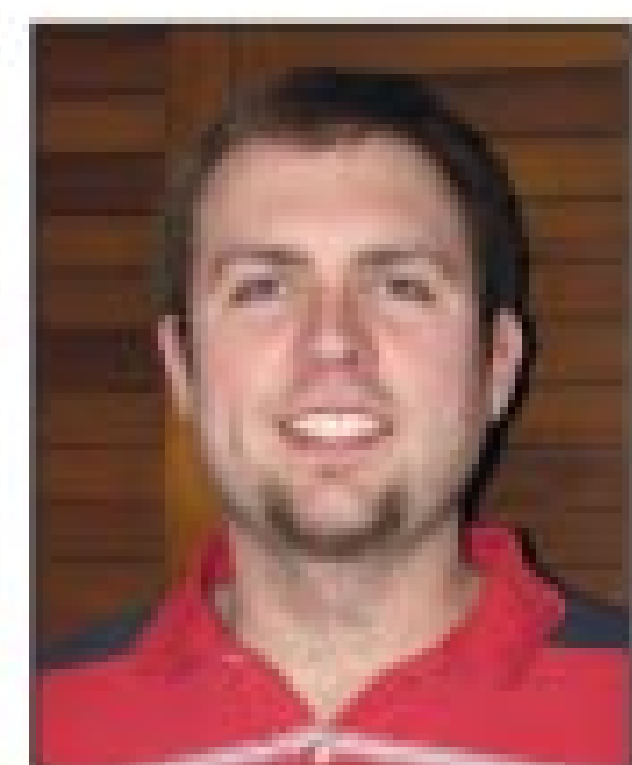
# Seeking Concrete Answers

Experts evaluating septic tank corrosion seek the aid of industry professionals who discover deterioration during cleaning and maintenance

By **Scottie Dayton**

**F**or more than 20 years, onsite professionals have popped the lids on precast tanks, sometimes to find eroded outlet baffles, a flaky white substance engulfing exposed concrete aggregate, and deteriorating and collapsing walls.

Now experts are working to find out why this deterioration affects only a few tanks, and when it does attack, why it doesn't follow a consistent pattern. Hydrosulfuric acid, a byproduct of the *Thiobacillus* bacteria in septic tanks, is clearly the culprit, though until recently no one asked if specific circumstances were accelerating deterioration.



**Aaron Ausen**

The Wisconsin Onsite Water Recycling Association held a panel discussion on concrete deterioration at its 2010 conference. The Oregon Onsite Wastewater

Association uses its newsletter as a platform for pumpers to report findings.

"We need pumpers, plumbers, inspectors and precasters to talk about what's going on," says Aaron Ausen, vice president of WOWRA and a civil engineer specializing in concrete engineering. "We can't keep this a secret. We need to reveal the definitive problems and hopefully find the solution."

There is no simple answer, mainly because there are many variables and research, where it exists, is conflicting.

## Eliminate the obvious

Some concrete degradation comes from poor manufacturing practices, yet scientists creating a uniform concrete code fail because the parameters change from location to location. Quality is controllable, and Ausen and the Wisconsin Precast Concrete Association have selected a board to create a stringent yet attainable code for all precasters in the state. A third party would conduct mandatory testing.

"We agreed unanimously on our course," says Ausen. "We also would like inspectors and WOWRA to specify only certified tanks. That rules out construction variances and enables us to look more closely at corrosive causes."

Evidence suggests erosion caused by hydrogen sulfide occurs when there is extra turbulence in tanks. "It's prevalent in pump tanks, but not in gravity-flow systems or holding tanks," says Ausen. "The turbulence churns and releases the gas, which corrodes the tank and can travel through the effluent lines and into distribution boxes."

However, installer-designer Sue Schambureck of Madson Tiling and Excavating in Manitowoc, Wis., has replaced many corroded tanks from gravity-flow systems. She believes gas coming back from the drainfield contributes to deterioration.

Concrete corrosion occurs in specific areas of the country. Ausen sees it in northeast Wisconsin and the Indiana-Ohio Valley region. Kim Aldrich, a regulator in Yamhill County, Ore., notices deteriorated



Photos courtesy of Dawn Long

A sulfur deposit coats the rear wall and outlet of a tank. After pumping, it was noted that the tank's exposed aggregate was not damaged. Right: Latex paint floats in a 1999 tank. Pumping and cleaning revealed a missing outlet baffle, a pattern of cascading white and black ettringite, and only one-half inch of the rear wall remaining.

distribution boxes in areas with high sulfur and iron in the soil. "Before I publish any levels, I must study more cases to ensure that I wasn't encountering an anomaly," she says. "However, the soil pH of around 6 is not acidic enough to cause the destruction."

High iron levels produce hard water, and a second commonality Aldrich sees is household cleaners used to remove hard-water stains. She has learned that some contain hydrochloride-based chemicals. "Because I inspect just distribution boxes and drain lines, I have only



half the equation," she says. The affected systems are at least 20 years old.

## Online database

Ausen's second objective is to create a statewide online database, and eventually a national one where professionals can report their findings. "I want to assure pumpers that they will meet no resistance when coming forward," says Ausen.





**A pump-down of this 1970s tank revealed a missing outlet.**

tanks, we see the center wall deteriorate before the outlet because the gases aren't returning from the drainfield."

The result of hydrogen sulfide attacks is ettringite — a flaky, chalky, gypsum-like substance. By the time corrosion reaches structural steel, an orange-red stain (rust) shows through the ettringite. "If you see that color, proceed with



**This tank, manufactured in 1998, shows ettringite, a white, flaky substance that is a byproduct of an internal sulfate attack.**

"They should not take corroded tanks lightly."

Since most professionals won't know who manufactured the tanks, Schambureck recommends they tell customers to call the installer. Practitioners also should notify the local health authority, because the system could be failing. "Unfortunately, some inspectors brush it off as no big deal, but it is," says Ausen. "If corrosion reaches the structural rebar, we're talking a possible total collapse. That's scary."

Knowing the corrosion pattern helps in gauging the degree of degradation. Schambureck says the first area to corrode in a gravity system is the tank outlet. "Sometimes we can see right through the wall to the soil," she says. "The center wall of a two-compartment tank and the ceiling corrode next. In pump

bution boxes, but Long sees deterioration on newer systems that do have them.

### Theories abound

Some experts suggest that inadequate tank ventilation is to blame. While no definitive data exists that creating an exhaust system cures corrosion, they recommend installing a vented manhole cover with a charcoal filter.

"A Canadian precaster told me that house vents are insufficient if tanks are more than 15 feet away," says Ausen. "Long distances enable wastewater to churn in the lateral. In Ontario, they install tanks closer to the house and vent every riser. It appears to work for them."

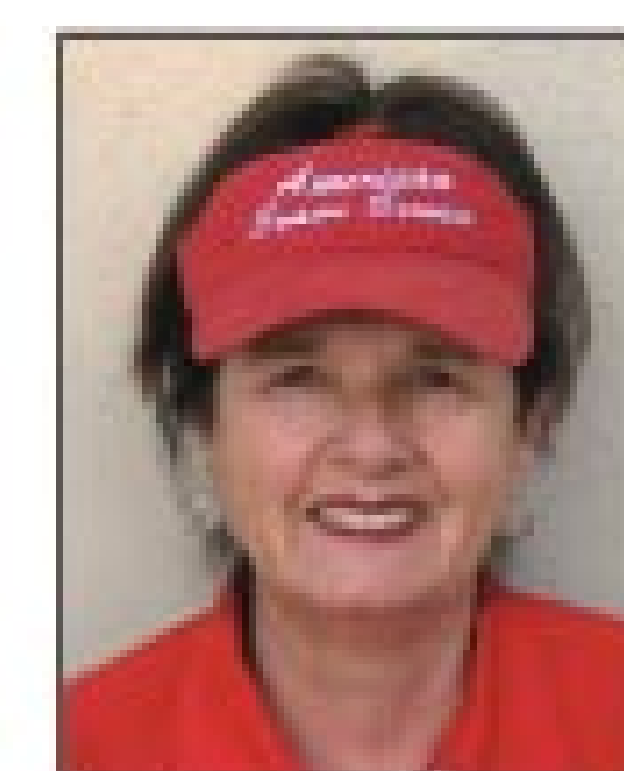
Another study by Long of 278 corroded tanks revealed that all were vented properly. She intends to put a sulfur gas meter in a newly installed tank for a week, then install a vent with charcoal filter and note any differences.

Other professionals suggest spraying a sealant on tank walls at the onset of corrosion. However, researchers found that one scratch or imperfection in the coating allows hydrogen sulfide gas to reach the aggregate.

harmful chemicals into the groundwater. "It's better to put something in the concrete mix rather than coat tank walls," he says.

Ausen hears theories about bleach mixing with certain chemicals in the tank and decomposing food from garbage disposals possibly increasing sulfide levels. Aldrich reports homeowners and house painters using muriatic acid as a cleaner.

Long suggests that latex paint in the tank accelerates deterioration. "In two documented cases, the degradation was markedly different, with ettringite hanging like stalactites," she says. "We also saw that the rear wall of a 1996 tank had eroded one inch. That's significant for a 12-year-old tank."



**Dawn Long**

### More evidence needed

While many factors may need evaluation, Ausen is focusing on anecdotal evidence from the field. Reports should contain as much relevant information as possible, such as tank location, manufacturer, age of tank, number of compartments, extent of deterioration, applicable parameters and photographs. E-mail reports to [aaron@dalmarayconcreteproducts.com](mailto:aaron@dalmarayconcreteproducts.com) and copy Aldrich at [aldrichk@co.yamhill.or.us](mailto:aldrichk@co.yamhill.or.us). ■

**"We need pumpers, plumbers, inspectors and precasters to talk about what's going on. We can't keep this a secret. We need to reveal the definitive problems and hopefully find the solution."**

**Aaron Ausen**

extreme caution, as you have no way to gauge the degree of corrosion," says Ausen. "Another red flag is when the rotten egg odor is strong enough to make your eyes water. Pump the tank very slowly, and watch for the formation of cracks."

As an inspector certified by the National Association of Wastewater Transporters, Dawn Long of American Septic Service in Sierra Vista, Ariz., has documented more than 2,500 degraded septic tanks. Of those, 20 of 225 tanks built with concrete baffles had the baffles in tact, though there was almost no aggregate deterioration on the tank walls. Most of those systems, from the 1960s and 1970s, lacked distri-

A Canadian precaster who used coatings for years, says they were ineffective. Ausen fears that as coatings corrode, they may release

**Pumper**

THE LIQUID WASTE INDUSTRY'S  
MUST-READ PUBLICATION SINCE 1979  
[www.pumper.com](http://www.pumper.com)

**SPI**  
Septic Products Inc.

*The most complete line of ...*

**System Alarms**  
**Float Switches**  
**On-Site Accessories**  
**Control Panels**

**Call Today**  
**419-282-5933**  
[www.septicproducts.com](http://www.septicproducts.com)  
[sales@septicproducts.com](mailto:sales@septicproducts.com)

# Really Kwik

**A team mobilizes to beat winter weather and other challenges and finish an onsite system in time for a travel center grand opening**

By **Scottie Dayton**

**K**wik Trip of La Crosse, Wis., wanted to build a travel center at the former site of a truck stop along Interstate 90 north of Nodine, Minn. Plans called for a restaurant seating 56 people, a coffee bar serving hot food and showers for truck drivers.

The two onsite systems on the property were undersized for the new project. Kwik Trip hired Kim O'Laughlin of O'Laughlin Plumbing and Heating in Winona, Minn., to design a system that could handle high-strength waste and fit on half an acre.

The solution involved a grease interceptor, two septic tanks, a flow equalization tank, sampling manholes, two fixed-film activated sludge treatment units, a dose tank and two drainfields. The company had enough men and machinery to

install the system quickly. Despite bad weather, site constraints and an early, brutal winter, the crews met the deadline for the center's grand opening.

## Site conditions

Soils are clay loam with a loading rate for highly treated effluent of 2.2 gallons per square foot per day. The seasonal high water table is 84 inches below grade. The site is surrounded by a freeway and agricultural fields.

## System components

O'Laughlin sized the system to handle 4,000 gpd at a waste strength of 1,200 mg/l BOD. Its major components are:

- 3,500-gallon grease interceptor. All tanks, made by Crest Precast Inc., LaCrescent, Minn.,

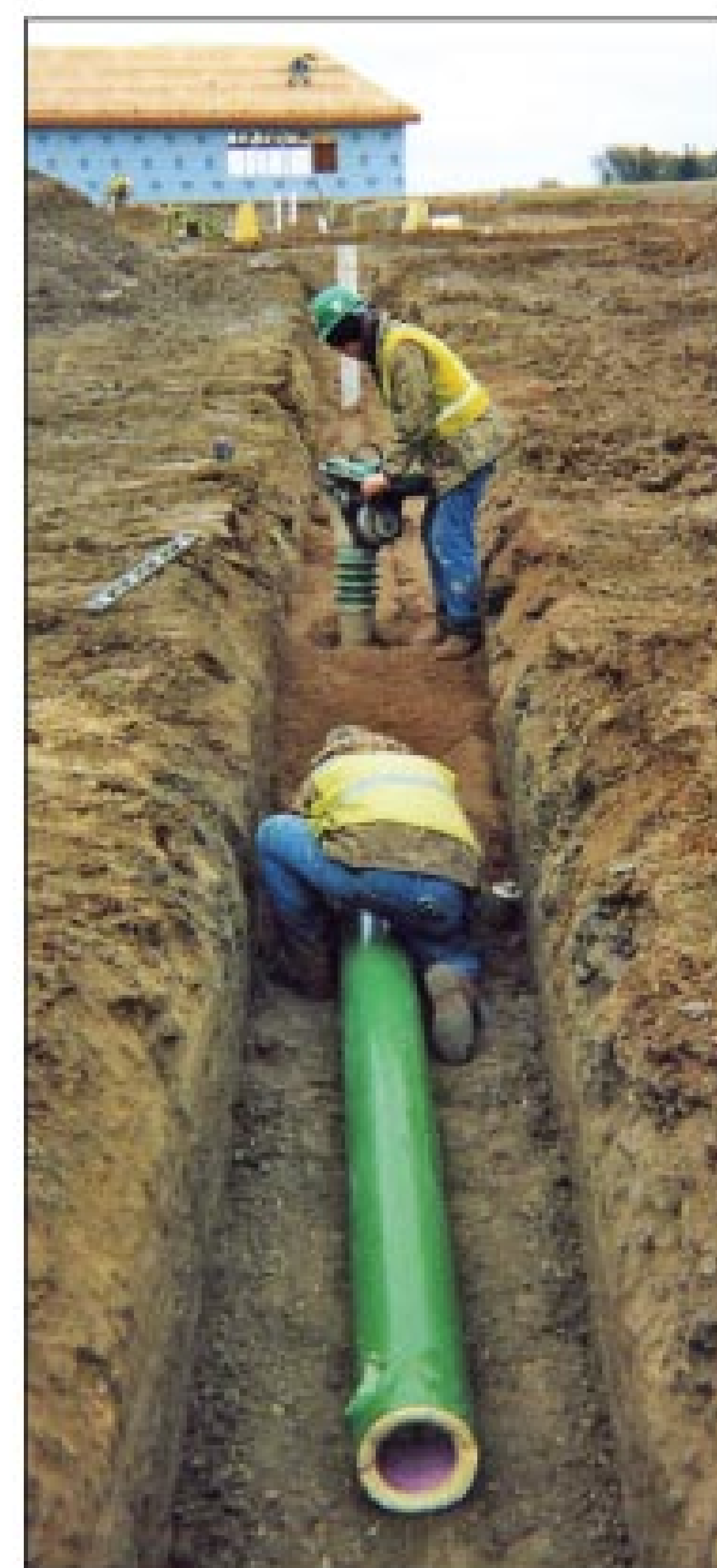


Gary Thill, operator for Modern Crane of La Crosse, Wis., prepares to lift the bottom half of a 10,000-gallon tank with the HighStrengthFAST unit inside. (Photos courtesy of O'Laughlin Plumbing and Heating)

have traffic-rated lids and cast-iron risers.

- 3,200-gallon septic tank.
- Recycled 6,000-gallon, dual-compartment septic tank with PL-525 effluent filter from Polylok Inc.
- 48-inch sampling manhole.
- 6,000-gallon flow equalization surge tank with two 1/2 hp EP0538 Red Jacket Water Products - ITT effluent pumps supplied by Petersen Supply LLC., Fredonia, Wis.

Corey O'Laughlin (foreground) and Kyle McNallan install 6-inch insulated Insul-Seal PVC pipe from the building to the septic tank.



## System Profile

<b>Location:</b>	Nodine, Minn.
<b>Facility served:</b>	Kwik Trip travel center
<b>Designer/installer:</b>	Kim O'Laughlin, O'Laughlin Plumbing and Heating, Winona, Minn.
<b>Site conditions:</b>	Clay loam soils; seasonal water table 84 inches below grade
<b>Type of system:</b>	FAST units from Bio-Microbics Inc.; Smart-Rock media from Infiltrator Systems Inc.
<b>Hydraulic capacity:</b>	4,000 gpd





In the background, Wayne Hornberg (left) and Corey O'Laughlin set grades for the manhole covers. Steve Mader (bending over) disconnects the crane from the 6,000-gallon surge tank.

- Control panels from American Manufacturing Co. Inc., Elkwood, Va.

### System operation

Most plumbing is 6-inch Schedule 40 PVC pipe insulated with two inches of sprayed-on foam protected by plastic wrap. Effluent from the grease interceptor and septic tank enters the 6,000-gallon septic tank, passes through the first sampling manhole, and feeds by gravity into the equalization tank, installed to handle surge flows.

Pumps in the surge tank alternate, running for two minutes every half hour and delivering 83 gallons to each aerobic treatment unit through 2-inch pipes. O'Laughlin chose the FAST system because it requires little maintenance and reduces BOD and TSS to less than 30 mg/l with 65 percent nitrogen reduction. Effluent gravity-flows

solid; the top bundle has the laterals. The tubes are stacked tightly side by side.

The system uses 10-foot lengths of 4-inch Schedule 40 perforated corrugated PVC pipe surrounded by 12 inches of lightweight geosynthetic aggregate. Polyethylene netting holds everything together. "Using four zones was another way we kept down the pump sizes," says O'Laughlin.

### Installation

Once the general contractor prepared the site, bad weather arrived. "Every moment it wasn't raining and the site was dry enough, I had one crew setting tanks and another working on the drainfield," says superintendent Corey O'Laughlin. "We had eight weeks to install the system before the ground froze. It rained 30 percent of the time, and an early winter was closing in fast."

Steve Mader of Crest Precast Inc. delivered the tanks. The 6,000-gallon septic tank was recycled from another Kwik Trip location after Mader tested its structural integrity. Tanks closest to the building — grease interceptor, septic and surge — were installed first, enabling contractors to pour the concrete parking lot over them.

After installing the tanks with their tops 3 feet below grade, O'Laughlin's men insulated them with 2-inch-thick foam to further protect them from freezing. The men set the manholes, ATU tanks and dose tank the same way. "Our biggest challenge was keeping the equipment from sliding off the greasy soil into the ravine," says O'Laughlin.

Tony Birrittieri and Bob Zwiefelhofer of Petersen Supply helped install the FAST units, pumps on guide rails, blowers and controls, then programmed the dosing schedule. The FAST units, containing media to which bacteria cling, are box-like containers standing on legs inside the concrete tank. The blowers sit at-grade in enclosures.

After O'Laughlin's men mowed the tall grass on the drainfield site, the excavator dug 3- by 2.5-foot-deep trenches on 5-foot centers. "Every time it rained, we had to wait



Corey O'Laughlin glues 4-inch Schedule 40 perforated corrugated PVC pipe together for the pressure distribution system. The pipe is inside the Smart-Rock geosynthetic aggregate drainage tubes.

**"We had eight weeks to install the system before the ground froze. It rained 30 percent of the time, and an early winter was closing in fast."**

**Corey O'Laughlin**

- Two 10,000-gallon tanks with Bio-Microbics Inc. 9.0 High-StrengthFAST aerobic treatment systems set side by side, supplied by Petersen Supply.
- 48-inch sampling manhole.
- 2,000-gallon dose tank with four dedicated 1/2 hp Red Jacket Water Products - ITT 2WS1038B submersible sewage pumps.
- 300 feet of pre-insulated 6-inch Schedule 40 PVC pipe from Insul-Seal, Racine, Minn.
- 5,280 feet of 1203-SEP Smart-Rock (formerly EZflow) geosynthetic aggregate drainage tubes from Infiltrator Systems Inc.
- 2,060 feet of 2-inch Schedule 40 PVC distribution laterals inside the drainage units.

through a 6-inch pipe through the second sampling manhole to the dose tank.

The dose tank is at the bottom of an 8-foot-deep ravine 300 feet behind the building. "Using four pumps instead of two allowed us to reduce their size and the gallons per minute requirements," says O'Laughlin. "We also avoided splitter valves, because they can freeze in Minnesota." An 8-foot backfall drains liquid to the dose tank when the pumps stop.

Each pump sends 625 gallons every four hours to a dedicated zone in the drainfields. Drainfield A has two 200- by 60-foot zones with six trenches each, and drainfield B has two 130- by 60-foot zones with eight trenches each. The bottom bundle of three aggregate tubes is



two or three days before the equipment wouldn't slide off the greasy soil and the footing was safer for the crew," says O'Laughlin.

The men drilled 1/4-inch holes 3 feet apart in the supply lines, then inserted them into the 10-foot-long bundles. They covered the top row with filter fabric extending halfway down both sides. After backfilling with 6 inches of native soil, they planted grass. "The drainfield is on the other side of the ravine and 450 feet from the back of the building," says O'Laughlin. "Customers won't even know it's there, let alone what it is." The center opened on time, creating 25 new jobs.

#### Maintenance

Petersen Management Co. in Fredonia has the service contract. Once a week, a technician checks the system. Twice a year, the technician draws effluent samples and submits them to the Winona County Health Department, checks the blowers, adjusts the flows as necessary and monitors the sludge level.

Kimo's Septic Tank Pumping in Winona has the pumping contract.

Grease tanks must be pumped when they are one-quarter full. The aerobic treatment tanks are scheduled for pumping every three years. ■

#### MORE INFO:

**American Manufacturing Co. Inc.**

800/345-3132  
www.americanonsite.com

**Bio-Microbics Inc.**

800/753-3278  
www.biomicrobics.com

**Crest Precast Inc.**

800/658-9045  
www.crestprecastconcrete.com

**Infiltrator Systems Inc.**

800/221-4436  
www.infiltratorsystems.com

**Insul-Seal**

507/378-4131  
www.insulseal.com

**Polylok Inc.**

877/765-9565  
www.polylok.com

**Red Jacket Water**

**Products - ITT**  
866/325-4210  
www.redjacketwaterproducts.com

## One Complete Package

promonthly.com

cleaner.com

pumper.com

mswmag.com

**onsiteinstaller.com**

pumpershow.com

pumpertrader.com

eq-mag.com

tpomag.com

septicyellowpages.com

sewerpages.com

**COLE Publishing**

**1.800.257.7222 | 715.546.3346**



## Featured in an article?

# Make the most of it!

## REPRINTS AVAILABLE

We offer:

Full copies of the original magazine

Hard copy color reprints

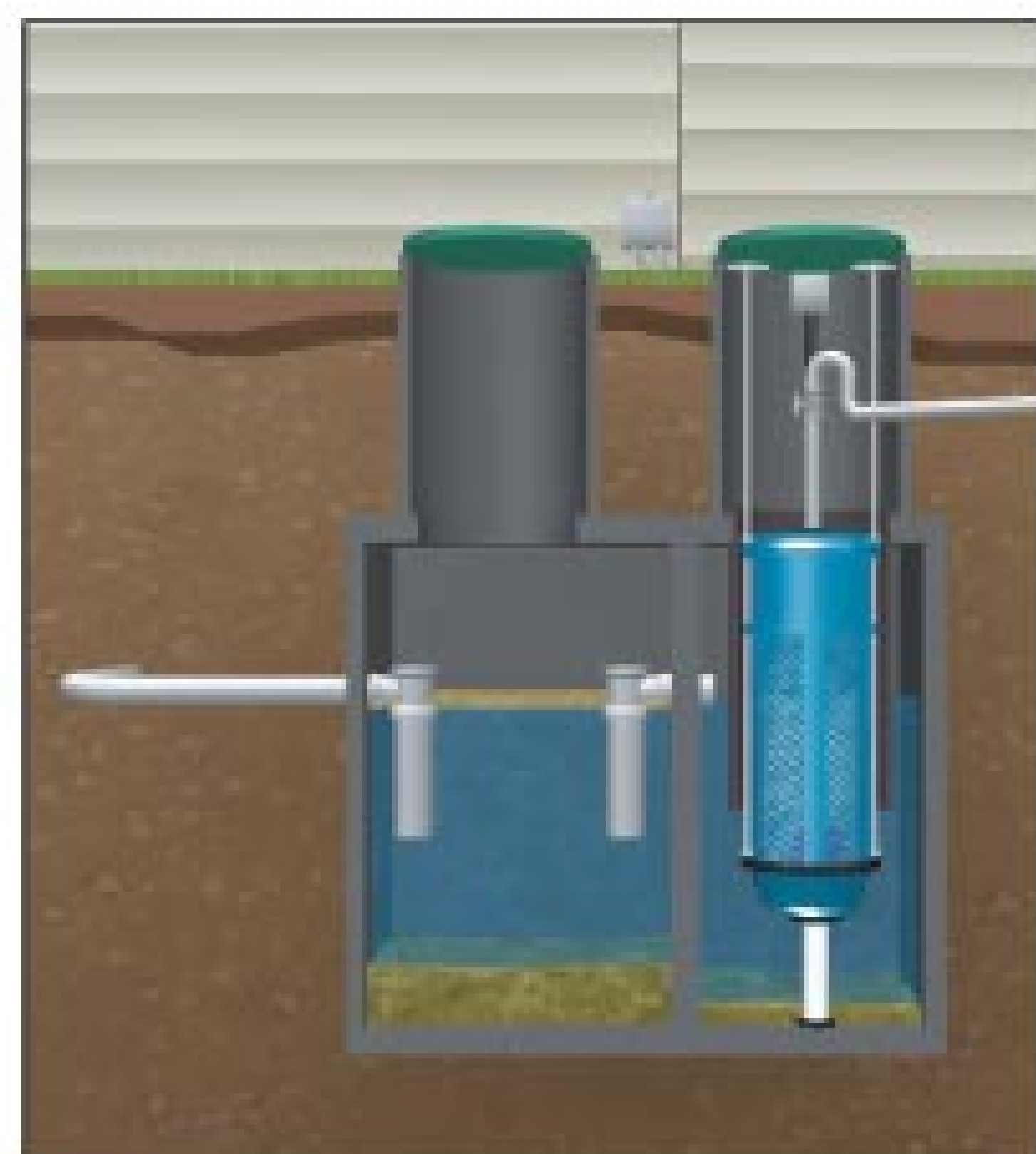
Electronic reprints

Visit **onsiteinstaller.com/editorial** for articles and pricing

E-mail [jeffl@colepublishing.com](mailto:jeffl@colepublishing.com)  
or call 800-257-7222



July 2010



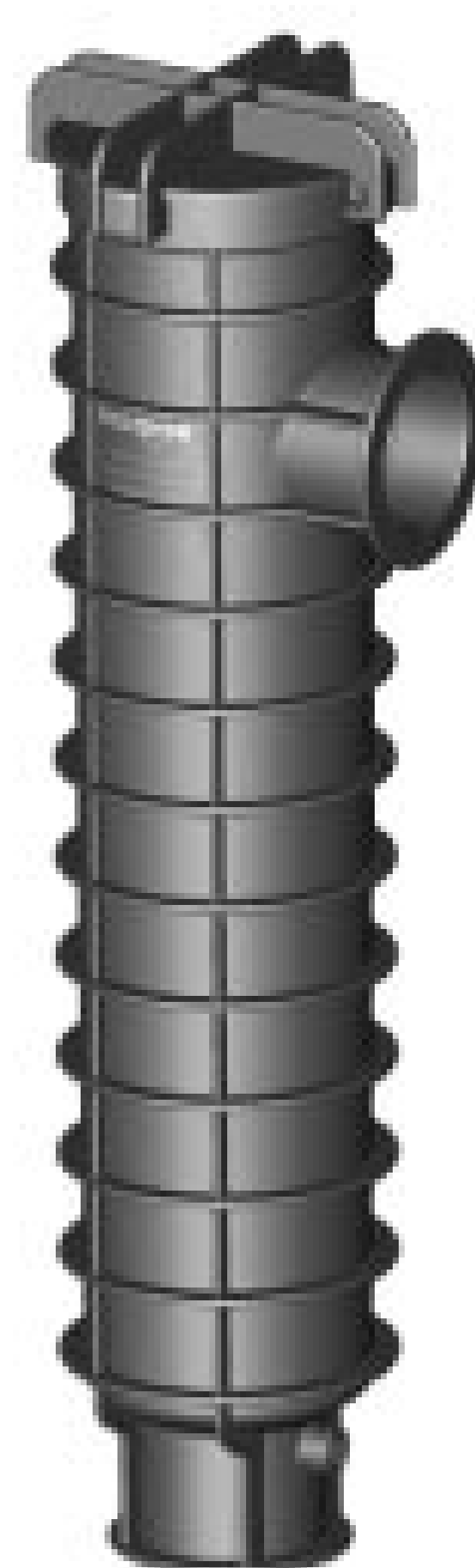
## Bio-Microbics Offers BioSTEP Pumping System

The BioSTEP screened pumping system from Bio-Microbics Inc. is designed to transfer screened liquids in small-diameter, decentralized collection applications. The unit uses SaniTEE screening technology to screen and deflect solids rather than collect and hold them. When the device is being serviced, an external cleaning swab is used to clean the pump vault exterior and flush out the angled slots. A

ScumGuard system acts as a shield to protect each unit from oil-laden scum and provides flexible, uniform installation options for most tank, manhole and riser configurations. 800/753-3278; [www.biomicrobics.com](http://www.biomicrobics.com).

## Polylok Offers Pressure Filter

The Pressure Filter from Polylok can be used in both residential and commercial applications and mounts to the discharge end of any pump. The filter is available with slip (glued) or FIPT (threaded) ports in heavy-duty stainless steel or reinforced plastic using a micron sock. 888/765-9565; [www.polylok.com](http://www.polylok.com).



## Top Hand Introduces 15 mil Latex Gloves

Disposable 15 mil latex gloves from Top Hand Safety are 12 inches long, extra strong and suited for a variety of uses. 800/282-1007; [www.tophandglove.com](http://www.tophandglove.com). ■

## FREE SUBSCRIPTION

Sign up today at [www.onsiteinstaller.com](http://www.onsiteinstaller.com)



Floats & Sensors, Alarms, Power Posts, Controls, Custom Controls



Phone: 218-483-3034 / [www.alderonind.com](http://www.alderonind.com)

CALL US TO SEE HOW TO MAKE AN EXTRA \$2,000 PER MONTH



## AERATOR

The STA60 and STA80 are specifically designed for years of trouble-free service and are a superior replacement for all 60 and 80 model pumps on the market.

STA60 ....\$220 STA80 ....\$250

**Best Value!**

**CARRIES A 2-YEAR WARRANTY**

## Flagg-Air™ Model 340

HAS BEEN SOLD  
NATIONALLY SINCE 1992  
AND HAS A REPUTATION  
AS THE LEADER IN  
AERATION!

- 3450 rpm
- 1/4 hp, 115V
- Enclosed motor
- Stainless steel shaft
- High impact plastic parts
- Operates quietly
- 2-yr. warranty
- Fits in place of most original manufacturers' units
- Replacement parts available



**Best Value!**

**\$350**

The Flagg-Air 340 does not carry the NSF seal. Check local and state regulations for approval in your area.

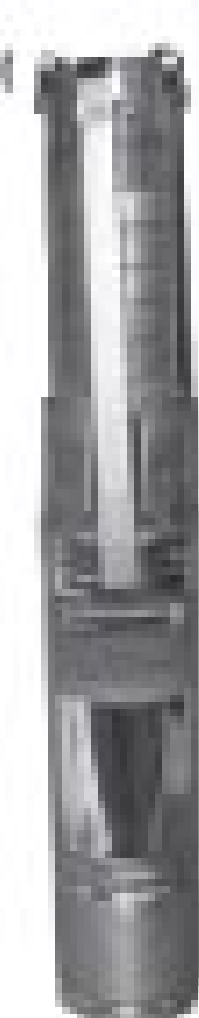


**R-5760 Blower**  
57 cfm.....\$375

## BULLET™

High Head  
Filtered  
Effluent  
Pumps

BP12...12gpm  
\$235  
BP20...20gpm  
\$255



## MEDO HEM LA-80 Linear Pump

with low pressure  
alarm & light;  
with on & off  
switch



## MEDO Piston

LA-60  
LA-80B  
LA-100  
LA-120



## SECOH Diaphragm

EL 60  
EL 80  
EL 100  
EL 120



0523  
1023



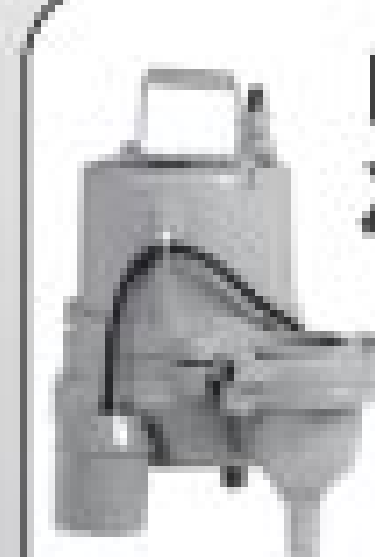
Rotary Vane  
Compressor

## Regenair®

R3105-12  
Blower

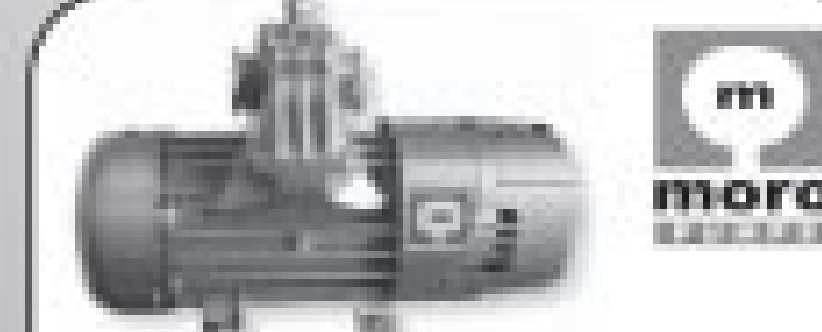


Hydromatic,  
Zoeller, ABS,  
Liberty &  
Myers  
Pumps

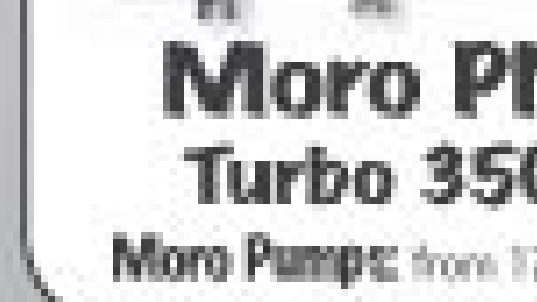


## Conde SDS 6 Engine Driven

Units available  
20 to  
180 cfm



**Moro PM80**  
Turbo 350 cfm



Moro Pumps: from 176 to 1642 cfm

toll free 1.800.536.5564 • 636.583.5564 • fax 636.583.6432  
e-mail [septic@fidnet.com](mailto:septic@fidnet.com) • web [www.septicserv.com](http://www.septicserv.com)



# Septic Services, Inc.



## Clean, Green and Growing

The North Carolina Septic Tank Association holds its Second Annual Symposium Aug. 4-6 at the Convention Center in Greenville. The theme, "Clean, Green and Growing," highlights opportunities to incorporate decentralized wastewater technologies with a total water resource package, and the importance of environmental and public health. Speakers and vendors will come from the wastewater, stormwater, reclaim/reuse and potable wells industries. Professional Development Hours are available. Call 336/416-3564 or visit [www.ncsta.net](http://www.ncsta.net).

## March Training Recap

The Pennsylvania Septage Management Association held its Annual March Training in Reading. It included basic and advanced onlot wastewater treatment system inspection courses, a standards refresher course, and the National Association of Wastewater Transporters vacuum truck technician course. Certified inspectors received a copy of the updated standards. Next year's session is March 22-23 at the Crowne Plaza Hotel in Reading. For more courses, call 717/763-7762 or visit [www.pasma.net](http://www.pasma.net).

## Bingo, Raffles and Auctions

Ten attendees at the Iowa Onsite Waste Water Association annual conference went home with \$100 after playing Blackout Bingo. Participants visited more than 30 industry vendors, and the exhibitors stamped their company's squares on bingo cards. The winning completed cards were selected in a drawing.

Auctioneer Robert Heemsbergen of Runnells sold off three packages of onsite components, raising a record \$9,675 for association programs and operating expenses. The previous record of \$9,475 was set in 2009.

A raffle that raised \$1,359 enabled attendees to take home 250 donated or purchased items. The most popular were two hand-

crafted, wooden Harley-Davidson toddler rocking motorcycles made by Doug Bird, IOWWA's president and Bremer County sanitarian, and Darwin Bengford of Municipal Supply Inc. in Des Moines.

Warren and Linn Counties are the latest of seven counties requiring onsite installers to have the Certified Installer of Onsite Wastewater Treatment Systems (CIOWTS) credential. Bremer County was the first to require the credential in 2008, followed by Jasper, Dallas, Floyd and Butler. Iowa has 158 CIOWTS credentialed installers, more than any other state.

## Licensing Bill Derailed

The Wisconsin Onsite Wastewater Recycling Association (WOW-RA) teamed with the Associated Builders and Contractors of Wisconsin and the Associated General Contractors of Wisconsin to kill a crane and heavy equipment licensing bill. If passed, it would have required operators of even excavators to hold a new license for public works projects. Operators would have had to go through a lengthy apprenticeship or have five years of experience to get the license.

## Installation Joint Effort

The Alabama Onsite Wastewater Association donated labor and materials to replace a failed onsite system for a needy family in Notasulga. Dave Roll, executive director, worked with the Macon County health officer to initiate the project after officials condemned the home's system — two 55-gallon plastic barrels and a straight pipe discharging to a woodland.

Kenny Ankers of Tallahassee Septic Tank Service in Tallahassee, Fla., donated the labor, and Matt Pickering of American Pride Septic Service in Auburn donated a 1,000-gallon, two-compartment concrete septic tank. Infiltrator Systems Inc. donated 45 of its new Quick4 Plus low-profile chambers and a 1,000-gallon septic tank.

## CALENDAR OF EVENTS

### Aug. 4-6

North Carolina Septic Tank Association Symposium, Convention Center, Greenville. Call 336/416-3564 or visit [www.ncsta.net](http://www.ncsta.net).

### Aug. 5-7

Florida Onsite Wastewater Association Conference and Trade Show, Daytona Beach Convention Center. Call 407/937-2228 or visit [www.fowaonsite.com](http://www.fowaonsite.com).

### Aug. 27-28

Georgia Onsite Wastewater Association Conference, Callaway Gardens, Pine Mountain. Call 678/646-0379 or visit [www.onsitewastewater.org](http://www.onsitewastewater.org).

### Oct. 18-20

BioCycle Conference On Renewable Energy From Organics Recycling, Marriott Downtown, Des Moines, Iowa. Call 610/967-4135 or visit [www.biocycle.net](http://www.biocycle.net).

### Oct. 18-20

North Carolina Annual Onsite Water Conference, Jane S. McKimmon Center, Raleigh. Call Joni Tanner at 919/513-1678 or visit [www.soil.ncsu.edu](http://www.soil.ncsu.edu).

### Oct. 19-20

Delaware Onsite Wastewater Recycling Association Conference, Dover Downs Hotel and Casino, Dover. Call Jim Williams at 302/492-3915 or visit [www.dowra.org](http://www.dowra.org).

### Oct. 25-27

National Onsite Wastewater Recycling Association Technical Conference and Exposition, St. Louis, Mo. Call 800/966-2942 or visit [www.nowra.org](http://www.nowra.org).

## TRAINING & EDUCATION

### NAWT

The National Association of Wastewater Transporters (NAWT) has these sessions:

- Aug. 26-27 – Inspection Training and Certification, Phoenix, Ariz.
- Aug. 30-31 – Inspector Training and Certification, Ruidoso, N.M.
- Sept. 15-16 – Waste Treatment Symposium, Washington, Pa.

For Arizona classes, call Kitt Farrell-Poe at 520/621-7221. For New Mexico classes, call Coda Omness at 575/257-3012. For Pennsylvania classes, call NAWT at 800/236-6298 or visit [www.nawt.org](http://www.nawt.org).

### Alabama

Licensing classes are the joint effort of the Alabama Onsite Wastewater Association and University of West Alabama:

- Aug. 12-13 – Continuing Education, Hanceville
- Aug. 25-27 – Advanced Installer Level I, Livingston
- Sept. 9-10 – Continuing Education, Florence

The first day of Continuing Education classes is for installers and the second day for pumpers and portable restroom operators. Call 334/396-3434 or visit [www.aowa.org](http://www.aowa.org).

### California

The California Onsite Wastewater Association is offering a System Controls class Aug. 13 at Sonora. Call 530/321-2207 or visit [www.cowa.org](http://www.cowa.org).

### Florida

The Florida Onsite Wastewater Association has these courses:

- Aug. 11 – Installer Program III, Polk
- Aug. 18 – Installer Program I, Tallahassee

Contact FOWA at 321/363-1590 or [www.fowaonsite.com](http://www.fowaonsite.com).

### Iowa

The Iowa Onsite Wastewater Association has these courses:

- Aug. 23-24 – CIOWTS Installation Overview and NEHA Exam, Cedar Rapids
- Aug. 25 – Troubleshooting



Onsite Systems, Cedar Rapids

- Sept. 24 – Servicing Alternative Technology, Waverly

E-mail Alice Vinsand at [execdir@iowwa.com](mailto:execdir@iowwa.com) or visit [www.iowwa.com](http://www.iowwa.com).

## Michigan

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

- Aug. 11-12 – Onsite Systems Evaluator Training
- Sept. 28-29 – Onsite Systems Maintenance

Call Barb DeLong at 517/355-4720 or visit [www.egr.msu.edu/age/outreach.html](http://www.egr.msu.edu/age/outreach.html).

## Minnesota

The University of Minnesota Extension has these classes:

- Aug. 3 – Sampling Onsite Systems, Waterville
- Aug. 17-20 – Service Provider, Mankato
- Aug. 22-23 – General Continuing Education, Grand Rapids

Call Nick Haig at 800/322-8642 or visit [www.septic.umn.edu](http://www.septic.umn.edu).

## Missouri

The Missouri Smallflows Organization is offering these CEU courses:

- Aug. 9 – Fundamentals of Soils, Poplar Bluff
- Aug. 10 – Selling Systems, Poplar Bluff
- Aug. 11 – Drainfields and Water Management, Poplar Bluff
- Aug. 24-25 – High-Strength Waste, Camdenton
- Sept. 14 – Media Filters, St. Louis
- Sept. 15 – Aerated Treatment Units, St. Louis
- Sept. 28 – Media Filters, Springfield
- Sept. 29 – Selling Systems, Springfield

Call Tammy Yelden at 417/739-4100 or visit [www.mosmallflows.org](http://www.mosmallflows.org).

## New England

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

- Aug. 12 – Surveying Basics for the Onsite Wastewater Contractor

- Sept. 2 – Conventional Onsite Wastewater Treatment Basics for Installers
- Sept. 16 – Innovative & Alternative Technology Overview
- Sept. 22-23 – Conventional Onsite Wastewater System Inspection Overview
- Sept. 30 – Innovative & Alternative Technology Field Overview

Call 401/874-5950 or visit [www.uri.edu/ce/wq](http://www.uri.edu/ce/wq).

## North Carolina

The North Carolina Soils and On-Site Wastewater Training Academy has an Introductory Installer Training course Sept. 27-29 in Fletcher. Call Joni Tanner at 919/513-1678 or visit [www.soil.ncsu.edu/training](http://www.soil.ncsu.edu/training).

## Pennsylvania

The Pennsylvania Septage Management Association is offering these courses:

- Aug. 17 – Confined Space Training, Grantville
- Aug. 28 – Competent Person Training, Grantville
- Sept. 14-15 – Basic and Advanced Onlot Wastewater Treatment System Inspection, Williamsport
- Sept. 29-30 – Advanced Onlot Wastewater Treatment System Inspection, Apollo

Call 717/763-7762 or visit [www.psma.net](http://www.psma.net).

## Utah

The Utah On-Site Wastewater Treatment Training Program is offering Onsite Wastewater Treatment Certification Workshops on:

- Sept. 20-21 – Level 1 Certification, Heber City
- Sept. 22 – Level 1 Renewal Certification, Heber City
- Sept. 23 – Level 2 Renewal Certification, Heber City
- Sept. 29 – Level 3 Renewal Certification, Logan

Call Ivonne Harris at 435/ 797-3693 or e-mail [ivonne.harris@usu.edu](mailto:ivonne.harris@usu.edu). ■

- ✓ **FREE Subscription**
- ✓ **Product Information**
- ✓ **Used Equipment**

All at  
[www.onsiteinstaller.com](http://www.onsiteinstaller.com)



# LARGE TANKS FOR PRETREATMENT UNITS

**CREST** Precast, Inc.  
NPCA Certified Plant

LA CRESCENT, MN • BARNEVELD, WI  
**1-800-658-9045 • [info@crestprecastconcrete.com](mailto:info@crestprecastconcrete.com)**

**Come In We're**  
**OPEN**  
[www.onsiteinstaller.com](http://www.onsiteinstaller.com)



## ALITA® LINEAR AIR PUMP

- ✓ Full range of efficient and reliable aeration pumps for Aerobic Treatment Unit
- ✓ Low energy cost and quiet operation
- ✓ 3 Years Manufacturer Limited Warranty
- ✓ Parts and repair available for variety of brands of linear air pumps

☎ Call 626-962-2116 for more information



**ALITA INDUSTRIES, INC.**  
P.O. Box 680923, Arcadia, CA 91068-0923, USA  
phone: (626) 962-2116 fax: (626) 962-2177  
on-line: [www.alita.com](http://www.alita.com) e-mail: [sales@alita.com](mailto:sales@alita.com)

## AERATORS

We sell Flagg-Air 340, Secoh, Gast and Medo Linear, FPZ and Gast Regenerative, Thomas and Gast Rotary Vane aerators, rebuild kits and alarms at wholesale prices. Septic Services, Inc. [www.septic-serv.com](http://www.septic-serv.com). 1-800-536-5564. (IM)

## 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](http://www.carymfg.com). (IBM)

## BUSINESSES

**BACKHOE, SEPTIC PUMPING, INSTALLATION BUSINESS:** Central Illinois. Established 15 years. Most work is in a 40-mile radius. Very nice town; 25 miles from University of IL. Will train and get you licensed. \$110,000. 217-417-0374. (I7)

33-year-old Trenching & Excavating Business in stable midwest economy. Grosses \$1,000,000 - \$2,000,000 per year. Business includes several excavators, backhoes, trucks, trailers, etc. Business is for sale complete with equipment, clients, inventory and experienced, long-term employees. This company has specialized in septic systems, basements and grading for residential, site utilities and demolition for commercial, water and sewer mains for municipal. Asking \$1,680,000. Email [dirtsepticandmore@yahoo.com](mailto:dirtsepticandmore@yahoo.com) for more information. (I7)

**WELL-ESTABLISHED AND PROFITABLE TEXAS SEPTIC, SEWER & INSTALLATION BUSINESS FOR SALE.** Grossing in excess of \$600,000 annually, customer list of nearly 2,000 accounts and 430 contracted customers. Includes nice late model equipment, most are 2007, 2008 model years. Real estate with rental income included in asking price - office and home generate \$1,000+ per month in rental income. Asking \$799,000. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** [www.BTwo.biz](http://www.BTwo.biz). (IBM)

## BUSINESSES

**South Florida Commercial Real Estate, Plumbing, Septic & Sewer Business For Sale.** Established in 1969, owner is moving on. Nearly 8,000 customers in database including some contracted. Established name with real estate on turnpike. Real estate appraised in excess of \$2 million, business grosses in excess of \$1 million, close to \$1 million in equipment including Vactor, Guzzler and Safe Jet trucks. Equipment has been featured in *Cleaner* magazine. Assumable SBA loan for bulk of selling price. \$2,799,000 for the entire package. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (IBM)

**Massachusetts Sewer & Drain Franchise For Sale.** Confidential listing, Non Disclosure Agreement required. Turn-key business, good revenue — **asking \$165,000.** E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** (IBM)

(2) Septic tank delivery trucks; 1-ready mix truck; 7-Celco septic tank forms (1000-1500 gallon); misc. drop box, riser forms, lift tank forms. Trucks and loaders in good condition. (In service in 2007) All forms in good or better condition. (Used in 2007) Package price \$70,000. 218-829-9678 or 800-829-5755. (IBM)

**NORTH CAROLINA SEPTIC AND INSTALLATION BUSINESS FOR SALE.** Showing good growth over the past 3 years. Includes all equipment to operate, extensive customer list, and owner is willing to train if necessary. Asking \$110,000. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** (IBM)

**LOOKING TO SELL YOUR PORTABLE RESTROOM BUSINESS?** We have buyers looking in the following areas; Florida, California, Virginia, Iowa, Kentucky, New York, Pennsylvania and more! Must have gross revenue in excess of \$250,000 in most cases. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** (IBM)

## BUSINESSES

**WANTED:** Looking to acquire septic businesses in Massachusetts. All inquiries will be confidential. 508-868-7627. (IBM)

**Looking to buy a business** in the liquid waste, portable sanitation, or sewer & drain industries? Call B2 Business Brokers powered by *On-site Installer* at 800-257-7222 and we can add you to our VIP buyer list. No obligation, no fees, no pressure. (IBM)

**Chicago-Area Biosolids, Land Application, Dredging and Industrial Services Business.** Established in 1985, owner is retiring. Reputable business includes real estate servicing the entire Chicagoland area with sludge and biosolids disposal and treatment services. Real estate and shop included with sale valued at \$750,000, business grosses in excess of \$3 million annually, \$6.3 million in equipment and assets including several TerraGators, Vac Trailers, dump trailers, loaders and much more. Offered at \$4,900,000 - huge potential, good profit and priced right. Non-Disclosure Agreement required, all P&L statements, list of assets, and financials available to qualified buyers. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing - www.BTwo.biz.** (IBM)

**Looking to sell your industrial cleaning, hydroexcavation or waterblasting business?** We have buyers. Must have gross revenue in excess of \$1,000,000 annually. Nationwide interest. E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** (IBM)

**Looking to sell your business?** We can effectively market your business to more than 60,000 potential buyers in the liquid waste, portable sanitation, and sewer & drain industries, as well as your local markets, the Internet and other venues. No upfront fees — you don't pay unless your business sells. To learn more about brokering your business through B2 Business Brokers powered by *On-site Installer*, call 800-257-7222. (IBM)

## BUSINESSES

**PHILADELPHIA/ALLENTOWN PENNSYLVANIA AREA SEWER BUSINESS FOR SALE.** Specializing in collection systems, video inspection, jetting, municipal work. Includes CUES TV & grout truck, Sewer Equipment Corporation jetter truck, Vactor 2100, RIDGID camera, confined space equipment and more! Good revenue history. Great opportunity to expand or start your own business. Current owner wants to retire. **Offered at \$330,000.** E-mail [jeffb@colepublishing.com](mailto:jeffb@colepublishing.com) or call 800-257-7222 and ask for Jeff Bruss for more details. **A B2 Business Brokerage Listing.** (IBM)

## DRAINFIELD RESTORATION

New Terralift for sale. Bought new in 2009, less than 50 hours. In excellent condition, \$26,000. 843-283-3749. (PI8)

**Soil Shaker 2000.** Universal skid steer attachment for drainfield restoration. Buy factory direct \$5,950. [www.soilshaker.com](http://www.soilshaker.com) or call 320-293-6644. (IBM)

## HAND TOOLS

**Crust Busters** - Portable, lightweight machine guaranteed to mix up septic tanks and grease traps! Save time and money! **www.crustbusters.com**, 1-888-878-2296. (IM)

## JETTERS-TRAILERS

**Xtreme Flow Cold Jetter - New!** Model # CJ85-3600TU, tandem axle trailer, 35 HP Vanguard, 8.5 gpm @ 3,600 psi, 325 gal. water tank, 300' hose, General pump. List \$19,995. **Sale only \$14,995. Fully loaded!** 800-624-8186; [www.hotjetusa.com](http://www.hotjetusa.com). (IBM)

## POSITIONS AVAILABLE

**SALES POSITION: United Liquid Waste Recycling Inc.,** located in Southeastern Wisconsin, is looking for a salesperson with a direct knowledge of the solid and liquid waste industry. Contact us at 888-558-9611 ext. 119. [united\\_hr@yahoo.com](mailto:united_hr@yahoo.com). (PBM)

## PRESSURE WASHERS

New Commercial Grade Trailer Special - Single axle, hot water trailer unit, 18 HP Vanguard, 5.0 gpm @ 3,000 psi, with 200 gal. water tank, General pump. List \$11,995. **Sale only \$8,995. Fully loaded! Ready to clean!** 800-624-8186; [www.powerlineindustries.com](http://www.powerlineindustries.com). (IBM)

## PUMPS

Hydromatic, Zoeller, Liberty, ABS, Myers, Grinder and Effluent pumps. Lift station packages and high water alarms are also available. Septic Services, Inc. [www.septicserv.com](http://www.septicserv.com). 1-800-536-5564. (IM)

## TRUCKS, MISC.

FOR SALE: 2002 Sterling Acterra (California), Vac-Con - 4 - 75 gallon water tanks, 3 - yard debris tank, 105,874 miles, hydro-excavation, jetting, sewer clean-out. \$65,000 OBO. 760-480-2347; [johlnson@airxus.com](mailto:johlnson@airxus.com). (I7)

## WANTED

**Netafim USA, a manufacturer of onsite wastewater drip dispersal products** including dripline, filters, valves, meters and air vents is establishing a network of Manufacturers' Reps across the U.S. and Canada. Please contact Mike Stoll at 585-615-6440 or [mstoll@netafimusa.com](mailto:mstoll@netafimusa.com). (I8)

It's **EASY** to submit your classified **ONLINE!**  
Just go to:

**www.onsiteinstaller.com**

ADVERTISING

Place A Classified Ad

Fill in the **Online Classified Ad Blank!**



**The Most Durable & Economical**  
**Septic Lid**  
 Durable & Lightweight Polymer  
 WILL NOT Crack Like Concrete!  
 Easier to Handle & Transport  
 12", 18" & 24" Available  
 Easy Installation  
 Optional Sand Filled  
**800.868.0973**

## THE SHADDIX COMPANY



4-1000 gal.  
 Rebuilt Septic  
 Tank forms  
**\$7,000 Ea**

FOB Cullman, Alabama

2001 FL 70  
 Freightliner  
 Low mileage  
**\$35,000**



2002 Non-  
 CDL **\$33,000** Both equipped with  
 almost new hydraulic set beds  
 Will build forms to your specifications.  
 We build hydraulic set beds.

**256-338-4987 or  
 256-737-0051**

## Anchor Graphics, Inc. Labels & More

- Service Records •
- Portable Toilet Signs •
- Logo Signs •
- Signs (Plastic & Aluminum) •
- Gender Signs •

All types of custom printing  
 and sizes available!  
 Check out our great prices!

We Specialize in Waste  
 Management Labeling Solutions



**Best Value in  
 the Industry!**

10015 Rearwin Lane McKinney, TX 75071  
 sales@anchorgraphics.com  
 Phone: 972-422-4300 Fax: 972-422-4311  
 (800)875-7859 [www.AnchorGraphics.com](http://www.AnchorGraphics.com)

## SEPTIC SEEP

RESTORING DRAINFIELDS  
 FOR OVER 50 YEARS!

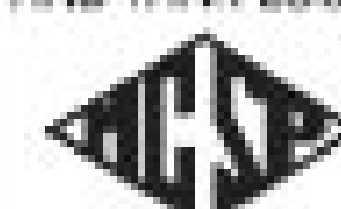


Over 90% of septic systems  
 fail due to problems in the  
 drain field.

Septic Seep:  
**\$49.95**  
 per gallon/  
**\$199.80**  
 per case of 4

Septi-Markers:  
 1.99 -  
**\$4.95** ea.  
 Price breaks  
 starts with  
 orders over 100.

WORKS AS A  
 BUSINESS CARD  
 AND TANK LOCATOR



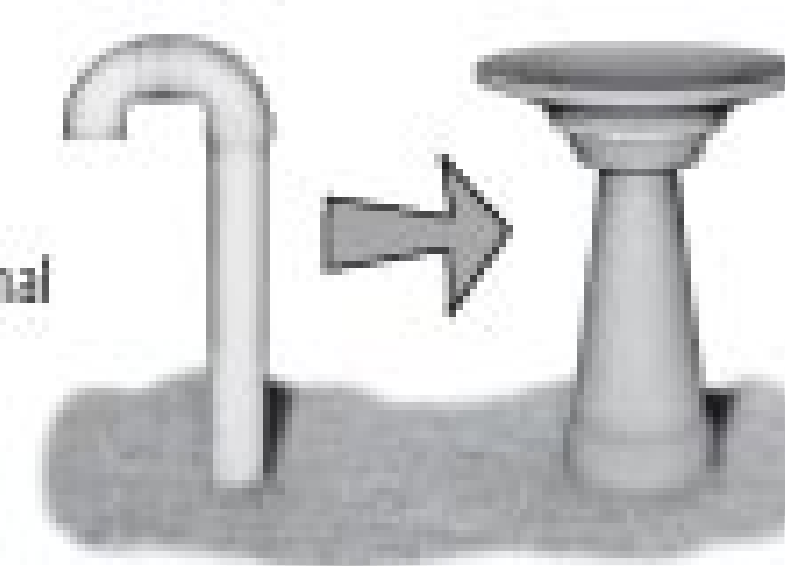
Visa & MasterCard Accepted

**1.800.537.5800**

## THE DIRTY BIRD Septic Vent Concealer

Features:

- Pedestal or Optional Birdbath Basin
- Durable
- Fade Resistant
- Stainless Steel Hardware
- Several Colors Available
- Recyclable
- 5 Year Warranty
- Meets or Exceeds All Regulations
- Made in the USA



Converts your ugly  
 septic vent into an  
 attractive bird bath  
 and controls odor with  
 our included charcoal  
 filtering system!

**866.968.9668  
 781.793.9334**

[www.thedirtybird.com](http://www.thedirtybird.com)

## Wolverine Brand The Best Septic Vent Filter Money Can Buy



- More Carbon than other filters
- Patented Cross Flow Design Wicks Away Moisture

[IndustrialOdorControl.com](http://IndustrialOdorControl.com)

866-NO-STINK (667-8465)  
 973-846-7817

Simple Solutions  
 RESTORING AND



## MARKETPLACE advertising

## SIMPLY BETTER™

Pioneers in Advanced Wastewater Treatment since 1955™

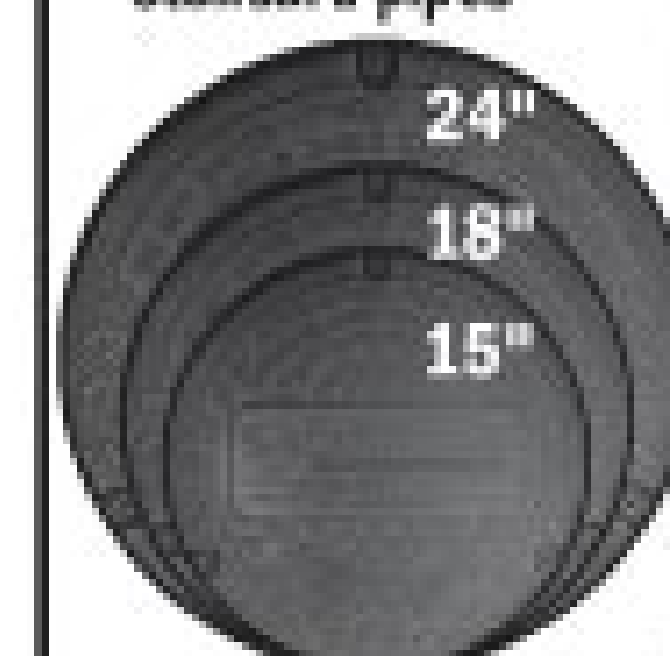
**Better For Precasting  
 Better For Installation  
 Better For Service**

1.800.321.6960 • [www.jetincorp.com](http://www.jetincorp.com)  
 email@jetincorp.com



RomoTech is a  
 custom mold.  
 See us for your  
 new project.  
 574.831.6450  
[www.romotech.com](http://www.romotech.com)

- Long lasting durability
- On-site installation flexibility
- Custom logo option
- 15", 18" and 24" sizes designed to fit standard pipes



Optional tank  
 adapter  
 accommodates  
 supplied  
 secondary  
 cover

## ONSITE installer MARKETPLACE advertising

Onsite Installer Marketplace gives you nationwide  
 exposure to thousands of industry professionals.

Layout and design is included **FREE**, and we can  
 fax or e-mail you a proof for final approval!

**Now Available In 4-Color Or Spot Colors**

*Choose a size that works best for you!*

**Call 1.800.994.7990**

Size A: \$309<sup>00\*</sup> Size B: \$209<sup>00\*</sup> Size C: \$109<sup>00\*</sup>

1.875" W x 4.875" H

This size is great for two photos!

1.875" W x 3.2" H

Perfect size for one photo!

1.875" W x 1.5" H

A great value!

\*Black and white prices, call for 4-color pricing.

Send ad materials and payment to:

**COLE PUBLISHING INC. • P.O. Box 220 • THREE LAKES, WI 54562**



Seriously though...  
 Homeowner's  
 choose  
**PAGODA VENT™**.  
 The only good looking septic  
 vent on the market.

- ⇒ Optional Pagoda Filter Cartridge for lasting ODOR CONTROL
- ⇒ Low price
- ⇒ Easy to install
- ⇒ Choose from sizes 1" to 14"
- ⇒ Variety of natural landscape colors, Pagoda blends into any landscape.

MADE TO LAST A LIFETIME  
 MADE IN THE USA

Volume discount  
 prices available.

[pagodavent.com](http://pagodavent.com)

1-888-864-1468  
**Pagoda Vent Company**



For a free catalog or to see other products call or visit our website: [www.polylok.com](http://www.polylok.com)