August
2015

ONSITE installer™

PROMOTING WASTEWATER TREATMENT QUALITY AND PROFESSIONAL EXCELLENCE www.onsiteinstaller.com

A TAILORED FIT

Specializing in RV parks, commercial projects and complex residential systems, Greg Mayfield's business is built to serve the needs of onsite customers in the sunny Southeast PAGE 10

Don't get caught in a jam

US Patent # 7,159,806

Omnivore® Grinders

The only patented V-Slice® cutter technology.

Setting the new standard in grinder pump performance.

Liberty Pumps

50 years 1965 - 2015

800.543.2550 libertypumps.com

7000 Apple Tree Ave. • Bergen, New York 14416

Single stage and 2-stage models available. Heads to 185'

Copyright © Liberty Pumps, Inc. 2015 All rights reserved.

AQUAworx by INFILTRATOR · INFILTRATOR tanks · Quick4 PLUS CHAMBER SYSTEMS · EZflow by INFILTRATOR · Quick4 CHAMBER SYSTEMS · TW-RISERS by INFILTRATOR

800-221-4436 • www.infiltratorwater.com

contents

August 2015

COVER STORY

Coming Next Month: September 2015

ISSUE FOCUS:
Distribution Equipment and Systems

- **System Profile:** Minnesota installer faces many challenges
- **Shop Talk:** Keep a clear view of the road

ONSITE installer

Published monthly by
COLE publishing
1720 Maple Lake Dam Rd. • PO Box 220
Three Lakes, WI 54562

Call toll free 800-257-7222;
outside of U.S. or Canada call 715-546-3346
7:30 a.m.-5 p.m. Central time, Mon.-Fri.
Website: www.onsiteinstaller.com
Email: info@onsiteinstaller.com • Fax: 715-546-3786

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 subscribe please visit onsiteinstaller.com or send company name, mailing address, phone number and check or money order (U.S. funds payable to COLE Publishing Inc.) to the address above. MasterCard, VISA and Discover are also accepted. Supply credit card information with your subscription order.

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.labeau@colepublishing.com.

CLASSIFIED ADVERTISING
Minimum rate of $25 for 20 words; $1 per each additional word. 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 Winnie May 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.


Winnie May

EDITORIAL CORRESPONDENCE
Send to Editor, *Onsite Installer,* P.O. Box 220, Three Lakes, WI, 54562 or email editor@onsiteinstaller.com.

REPRINTS AND BACK ISSUES
Visit www.onsiteinstaller.com for options and pricing. To order reprints, call Jeff Lane at 800-257-7222 (715-546-3346) or email jeff.lane@colepublishing.com. To order back issues, call Nicole at 800-257-7222 (715-546-3346) or email nicole.labeau@colepublishing.com.

CIRCULATION
Circulation averages 21,954 copies per month. This figure includes both U.S. and International distribution.

© Copyright 2015 COLE Publishing Inc.
No part may be reproduced without permission of the publisher.

wwett
Water & Wastewater Equipment, Treatment & Transport Show

WATER & WASTEWATER EQUIPMENT, TREATMENT & TRANSPORT SHOW
www.wwettshow.com
EDUCATION DAY: Feb. 17, 2016 EXHIBITS OPEN: Feb. 18-20, 2016
Indiana Convention Center, Indianapolis, Indiana

Get Social with *Onsite Installer*

www.facebook.com/OnsiteInstaller
www.twitter.com/OnsiteInstaller
www.plus.google.com
www.youtube.com/OnsiteInstaller
www.linkedin.com/company/onsite-installer-magazine

Presby Environmental

The Next Generation of Wastewater Treatment

Advanced Enviro-Septic® (AES)

- ✓ Passive Non-Mechanical Process
- ✓ Proven and Reliable Track Record
- ✓ Treatment and Dispersal
- ✓ Affordable

MADE IN THE USA

"An innovative, cost-effective and environmentally-friendly wastewater treatment system."

~The Guardian Newspaper, 2014

Find out why so many Designers and Installers rely on AES

www.PresbyEnvironmental.com • 800-473-5298

advertiserindex

AUGUST 2015

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

FREE Subscription at
www.onsiteinstaller.com

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 email editor@onsiteinstaller.com.

Get Paid Like a Professional

Your background and expertise as an installer has significant value. Sometimes you just have to explain that to customers.

By Jim Kneiszel

You talk a good game when explaining the nuts and bolts of a new onsite system to customers. Over the years it's become second nature to describe the soil characteristics on a piece of property and the series of components you'll have to place in the ground.

But there's always that pregnant pause when you have to bring up the M-word, as in money … moola … how much all this work is going to cost. Customers want to get to the bottom line and learn the price of an onsite system, and you can bet the gut reaction from most of them is that the estimate is too high.

Sure, you have a few dream customers who, right off the bat, understand the cost of treating wastewater and quickly tell you to do what's necessary to ensure theirs is a quality system that will last a long time. They show a professional courtesy – meaning they courteously recognize you as a professional and don't question your motives when you hand them the estimate.

An onsite system has to be done right the first time, or headaches and heartaches will surely follow. For an average weekend warrior handyman to assume they can get it right is foolhardy.

But more often than not, the homeowner will need some degree of reassuring before they fully trust the numbers you've presented. If it's any comfort, professional engineers and contractors in many fields face similar challenges. You need to justify your fees to get a signed contract and start designing or digging in the ground.

RAISE AWARENESS

I believe there's truth in the argument that many customers don't place an adequate value on what it takes to make their wastewater go away. Frequently I hear from frustrated installers who say homeowners don't understand the importance of a functioning wastewater system; that this vital system is what allows them to live in the suburbs on a big lot, in the wide-open country or on a beautiful waterway. Moreover, they think if a toilet flushes and waste goes away, that means everything is working as it should. Out of sight? Must be all right.

Your task – the one they don't teach you in onsite training and certification courses – is to raise customers' awareness of the critical importance and complexity of the onsite system they need from you. And it's about more than justifying the hefty bill you push toward them across the kitchen table. It's about growing respect for the work performed by the installing community. The better job we do at conveying this message, the easier it will be for contractors down the road.

So, here are a few messages you should include during your pitch to customers:

This is no do-it-yourself project

Contrary to what your customer's brother-in-law says, installing a septic system is not work for the weekend handyman. Installers typically have years – or generations – of practice at their profession to know where to site an onsite system and how to manage every aspect of the installation.

Land is not in infinite supply, and most building lots don't afford extra territory for a do-it-yourselfer to make a mistake and start over on undisturbed ground. An onsite system has to be done right the first time, or headaches and heartaches will surely follow. For an average weekend warrior handyman to assume they can get it right is foolhardy. Just like you wouldn't trust yourself to set a broken leg or fill your family's cavities, you should leave this work to a qualified installer.

Professional training is expensive

System designers and installers are constantly honing their skills with training given through health departments, university programs or state professional associations. They spend hours in the classroom and on field days every year to gain and retain professional certifications. Every time their jurisdiction allows a new technology, they must train on how to properly install and monitor the system. Combine the hours of time spent with the fees paid to instructors, and installers spend thousands of dollars a year keeping pace in an ever-more-technical industry.

Now think about the installer with 20 years of experience. He or she started as a helper moving materials and learning to operate machinery. As they progressed in their profession, they started to earn a little more money. Experience in any field demands fair payment. The same is true for your customer, whatever their job is. Installers provide a vital service, and customers must expect to pay for their expertise.

ONSITE CONTROLS

No matter the application, we've got it under control, from float switches to event monitoring control panels, and everything in between. Now backed by our industry-leading five-year limited warranty!

5 YEAR LIMITED WARRANTY

SJE Rhombus®

www.sjerhombus.com

New & Improved PS Patrol® System
The newly enhanced PS Patrol® system features a sleek angled clear enclosure with a removable cover for easy access for field wiring. All components are sealed within the cover for protection from the elements. Red LEDs illuminate cover for 360° visual of alarm condition.

IFS Panels with C-Level™ Sensor
C-Level™ sensor detects the liquid level in the tank and sends a signal to the IFS panel. Pump activation and alarm levels are adjusted on the panel touch pad, eliminating the need to go into the tank. One C-Level™ sensor simulates up to four (float) levels.

Tank Alert® EZ Alarm System
This new alarm is all about making installations easier! It features an innovative enclosure which integrates the red LED beacon, external mounting tabs for quick installation and a removable cover which allows greater access for easier field wiring.

Insurance prices are always rising

A reputable installer will carry insurance to cover all sorts of contingencies on the job. They will have liability insurance, insurance on their equipment and hopefully a significant umbrella policy that overarches all of their insurances to offer further protection. And as anyone who has a car, a home or a business knows, these costs go up every year. Homeowners should demand that your professional contractor is adequately insured … and consider those invisible costs when looking at a job estimate.

Tools of the trade are expensive

It wouldn't be unusual for an installer crew to roll up to the work site with equipment that's worth more than the customer's home and property combined. The value of excavators, trailers, scads of power tools and supplies – as well as the trucks to bring tools and workers to the job – easily push into six figures. Then there's the maintenance, repairs, depreciation and saving for new equipment … The day-to-day workload has to cover these costs for the professional installer to continue to offer his or her services.

Explain the cost of components

Handing the customer a piece of paper with one number for installing a new system can be misleading. The recent True Cost Report from www.homeadvisor.com states the average national cost of installing a septic tank is $4,500 and ranges as high as $11,000. Advanced systems can be a lot more.

Unless you break down the costs, you may leave clients with the impression you're being paid $300 per hour for your time as the installer. On the other hand, fully itemizing the bill will show a good portion of the system cost is buying parts and pieces from your suppliers. Tanks, controls, pipe and pumps add up, and the list of those costs put into perspective what you are being paid for labor and expertise.

NO FREE LUNCH

Just because a homeowner has paid little or nothing for wastewater services in the past doesn't mean they shouldn't expect a bill in the future. Aging systems don't last forever, and new construction off the sewer grid requires an onsite system. It's my opinion that onsite system users are getting a good value for their dollar, especially when the costs are spread over the long term. And a professional system allows users the freedom to enjoy life where they want to live it.

Over 30 years experience
SEPTIC SERVICES, INC.
SEPTIC SYSTEM PUMPS, PARTS AND SUPPLIES STORE
TO ORDER
CALL TOLL FREE: (800) 536-5564
SHOP ONLINE
www.septicserv.com/store
(636) 583-5564

RETRO AIR
Available in 6 models to match your application
The Retro-Air provides a complete absorption field rejuvenation system that will improve flow and return a failed existing system back to optimal flow and performance.
Use in systems prone to backup in the tank.
Improve Flow
Eliminate Clogged Absorption Field Due to Biomat
Install in Single or Multiple Tanks
Starting at $590.00
2-Year Warranty

MAXAIR500
MAXAIR500 SUBMERSIBLE SEPTIC AERATOR
• Motor is fully enclosed, continuous duty
• Stainless steel motor enclosure & legs
• 15-foot power cord
$425.00
2-YEAR WARRANTY
Replacement for Multi-Flo Aerator*
* All original equipment manufacturer's names, drawings, and part numbers are used for identification puposes only, and we are in no way implying that any of our products are original equipment parts. Not associated with Multi-Flo or Consolidated Treatment Systems.

BULLET™
HIGH HEAD FILTERED EFFLUENT PUMPS
18-Month Warranty
All stainless steel construction built for years of dependable service
• 1/2 HP, 10 amp motor
• Prewired
• 15-foot power cord
Models:
BP12 (12 gpm) ... $280.00
BP20 (20 gpm) ... $280.00

FLAGG-AIR™ 340HT AERATORS
Flagg-Air
High-Torque Performance
We've increased motor torque and adjusted shaft length to provide greater aeration.
FEATURES:
• Motor is fully enclosed
• Prewired
• 7-amp mini-breaker
• Powder coated steel brackets w/ rubber vibration restrictors
• Stainless steel shaft w/ bronze counter shaft
• High impact plastic suds diffuser & aspirator tip
$350.00
2-YEAR WARRANTY
Does not carry the NSF seal. Check local and state regulations for approval in your area.

Max Filters 30-Pack (Complete Set)
Durable • Reusable • Highly Effective
Filter socks may be used in Multi-Flo* tank.
Call for prices

AERATORS
Superior choice for new installation or upgrading existing 40/60/80/100 models.
2-Year Warranty
Whirlwind Linear Air Pumps
Models:
STA40 ... $199.00
STA60N ... $220.00
STA80N ... $250.00
STA100 ... $340.00
STA80AL ... $320.00
"N" models include hose bib for low pressure alarm connection.
"AL" model has integrated audible alarm & warning light with toggle testing switch.

ALARMS • TIMERS CONTROLS
24-HOUR TIMERS
15-min increments settings
Model: P101FA-2 $105.00
• Warning light & reset switch
• Mini-breaker
Model: P101-2 $95.00

REGENERATIVE BLOWERS
18-Month Warranty
Whirlwind R-5760 ... $400.00
(57 CFM)

@onsiteinstaller.com

Visit the site daily for new, exclusive content. Read our blogs, find resources and get the most out of *Onsite Installer* magazine.

KEY CONSIDERATIONS

Wastewater Loads & ATUs

Both hydraulic and organic loading need to be considered when making a decision about which type of advanced treatment system to select and whether it fits the wastewater treatment needs. Learn more about sizing and selecting the proper ATU in this online series. **onsiteinstaller.com/featured**

Overheard Online

"The more tax-aware you are throughout the year, the smoother things will go for you when it comes time to fill out your returns, and the more likely it is that you'll take full advantage of your potential write-offs and deductions."

- 5 Simple Tax Planning Tips **onsiteinstaller.com/featured**

SEPTIC SCHOOL

Manifold Master Class

Not sure how to set up a piping system for even pressure distribution? Not confident about sizing the supply line? No sweat, just read this rundown of important considerations from our expert, Jim Anderson. **onsiteinstaller.com/featured**

UNDER PRESSURE

Laying Out Laterals

Plans for effective pressure distribution are different for each unique system, so a designer has a lot to think about. These design considerations for pressure laterals make achieving equal distribution a piece of cake. **onsiteinstaller.com/featured**

emails and alerts

Visit OnsiteInstaller.com and sign up for newsletters and alerts. You'll get exclusive content delivered right to your inbox, and you'll stay in the loop on topics important to you!

CONNECT WITH US

want more?

Find us on Facebook at facebook.com/OnsiteInstaller **or** Twitter at twitter.com/OnsiteInstaller

Any size project. Anywhere.

Bio-Microbics FAST® and SeptiTech® STAAR™ systems are proven wastewater solutions. Universally adaptable, scalable, and connects people to their onsite water source. Whether a big project or small, we understand today's realities; and, we are ready to help.

Simple, Low Cost, Robust

www.biomicrobics.com
800-753-3278 (FAST)
sales@biomicrobics.com

BIO MICROBICS®
BETTER WATER. BETTER WORLD.®

© 2015 Bio-Microbics, Inc.

A TAILORED FIT

Specializing in RV parks, commercial projects and complex residential systems, Greg Mayfield's business is built to serve the needs of onsite customers in the sunny Southeast

By Scottie Dayton

Greg Mayfield of Zephyrhills, Florida, found his life's passion in high school. His love of soils led him to a graduate certificate in hydrogeology (the study of aquifers and how water flows through soil and rocks) and employment as a registered environmental health specialist in the onsite section of the Florida Department of Health.

In 2001, while working as a registered sanitarian and hydrologist for the Southwest Florida Water Management District, Mayfield moonlighted nights and weekends testing soils and designing onsite systems for general contractors. Three years later, he was doing 40 soil tests per weekend and working 18-hour days. "Not only was the pace killing me, but I was losing money at my day job," he says.

The jump to opening Southern Water and Soil in 2005 wasn't hard. Mayfield already had a second income and an employee digging holes, testing soils and answering the phone in his absence. As Mayfield established the company's niche – repairing residential and commercial drainfields – its reputation for solving complex problems spread from Florida to North Carolina and, recently, Virginia.

EXPEDIENT SERVICE

Mayfield initially accelerated the permitting process by creating complete project packages for the health department to review. Contractors never complained about paying $250 more than the department charged if it helped them break ground faster. When projects such as service stations, churches,

Southern Water and Soil, Zephyrhills, Florida

OWNER:	Greg Mayfield
YEARS IN BUSINESS:	10
EMPLOYEES:	9
MARKET AREA:	Florida, North Carolina and Virginia
SPECIALTY:	Commercial and residential onsite repairs
AFFILIATIONS:	Florida Onsite Wastewater Association, National Environmental Health Association, Florida Environmental Health Association
WEBSITE:	www.sw-soil.com

<<OPPOSITE PAGE: The Southern Water and Soil team includes, from left, David Flynn, Derrick Priset, Kris Scanlon, Erica Cormier, Tanya Mayfield, Sean Flynn, Greg Mayfield and Gaston Montes. (Photo by Taylor Sonqui)

RIGHT: Cody Cummins, left, and Gaston Montes, operating the mini-excavator, prepare the location for a pump tank. In the foreground are Tuf-Tite risers and lids mounted to an Infiltrator IM-1060 septic tank. (Photos by Rob Herrera)

fast food restaurants and strip malls required 1,000-square-foot drainfields or larger, Mayfield turned to district engineer Bob Dasta to stamp the designs.

To reach homeowners and homeowner associations, Mayfield joined Angie's List. Once Southern Water repaired a system in a neighborhood, referrals brought in seven or eight more jobs over the next two years. "All those drainfields were installed around the same time, and they fail in series," he says.

"Homeowners don't know about control panels and alarms. They've never heard of passive aeration or effluent filters. By educating them about components and how they differ in quality, they understand why our system costs $3,000 more than standard drainfields."
Greg Mayfield

Southern Water, licensed in Florida and North Carolina, owns a Bobcat E50 excavator, Bobcat T650 skid-steer and a fleet of F-series Ford trucks. A local fabricator built a vacuum truck with a 2,000-gallon steel tank and Jurop/Chandler pump to expedite pumpouts at repairs.

Mayfield designs many residential systems with Singular (Norweco) aerobic treatment units discharging to Geoflow drip tubing or Infiltrator chambers. He prefers low-pressure dosing to Multi-Pipe systems (Plastic Tubing Industries) for drainfields larger than 1,000 square feet. To boost revenue further and consolidate components, he acquired distributorships from Norweco, Infiltrator Water Technologies, Tuf-Tite, Bear Onsite and Orenco Systems.

SILVER LINING

Then the economy crashed in 2008, and people restricted their money to essentials.

With septic systems low on their priority lists, Mayfield struggled to keep his company afloat.

In 2009, he heard the owner/main salesman of a local onsite company was ill. The business specialized in replacing drainfields in RV parks. Mayfield offered to help the family sell jobs and received a 10 percent commission for testing soils and pulling permits. "Instead of making $250 working for myself, I made $500 a job," he says.

The situation lasted a year, but it enabled Mayfield to keep his nine employees. It also opened the door to working for RV park and mobile home companies. Today, installing new systems accounts for 20 percent of the company's work; the remainder is repairs.

"Our revenue is 80 percent commercial and 20 percent residential," says Mayfield. "We do 10 residential repairs while waiting for the next commercial contract." The company does a few large projects a year.

ABOVE: Gaston Montes uses a Bobcat mini-excavator to move an Infiltrator IM-540 tank into place during an onsite system installation. Technician Cody Cummins guides the tank, while Southern Water and Soil owner Greg Mayfield, left, looks on.

RIGHT: Lead technician Gaston Montes uses a CST/berger laser level (Robert Bosch Tool Corporation) during site preparation.

Southern Water's first major project – and to date the largest – was Tropical Palms Resort and Campground in Kissimmee, Florida. Such facilities often have ponds called rapid infiltration basins into which treated effluent is discharged. "A basin wasn't percolating," says Mayfield. "By redirecting 30 percent of the flow to 180,000 feet of Geoflow drip tubing, we came in $100,000 below another contractor's bid." It took two months to install the 8-acre drainfield, and the job put the company on the map.

Mayfield, 40, says their quotes are competitive because there is no middleman. They do the engineering and the installation, and distribute the products. "Lumping all our assets under one umbrella streamlines quotes," he says. "We never low-ball prices."

TARGETS HIGH-END PROJECTS

After 10 years of repairing other contractors' onsite systems, Mayfield attributes many failures to cheap components and careless installations. Wishing to avoid a clientele concerned with only the bottom line, his business targets high-end residential and commercial customers. Experience has taught him the more affluent do research and are easier to educate, therefore his primary marketing tool is Google.

Mayfield's sales presentation explains every replacement product and why it's important. "Homeowners don't know about control panels and

(continued)

Let the buyer beware

Part of Greg Mayfield's presentation to homeowner associations includes tips about how to hire the right contractor for the job.

The top of his list includes confirming that contractors pay workers' compensation. "If a worker is injured, the association's insurance shouldn't have to pay," says Mayfield, owner of Southern Water and Soil in Zephyrhills, Florida. He also advises associations to add their name to the contractor's insurance policy, stressing the importance with the following example.

After a contractor proved to an association that he had insurance, he cancelled his one-day policy. The excavator's boom hit the side of a home, damaging the siding, destroying the roof and leaving the homeowner's insurance to cover $7,000 in damages. The homeowner sued the contractor and won a judgment against him, but it took a lot of time and aggravation.

Mayfield also tells homeowners to research companies through the Better Business Bureau website, Angie's List and reviews on Google.

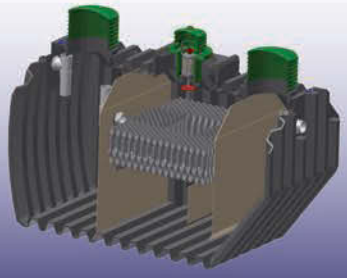
"Septic emergencies often have a myopic effect on people," he says. "They think only of fixing the problem rather than protecting themselves against property damage."

Accu-Tab® Wastewater Tablets
- U.S. made, recognized global brand with no imported ingredients
- Chlorine tablet with beveled edges to minimize wicking
- Consistent chlorine strength for reliable dosing control
- No measuring, mixing, or spilling of chemicals common with granular and liquid chlorine
- Stearate free formula with balanced pH

Illumi-Jet UV Disinfection Unit®
- UL listed as a NEMA 6p enclosure (watertight submergence test)
- Install directly in ground or in pump tank on 4" effluent line
- Complete disinfection without the use of chemicals
- Hermetically sealed electrical components
- High capacity disinfection reservoir
- Kapton® seals improve serviceability

Jet®
Wastewater Treatment Solutions

1955 60th ANNIVERSARY 2015
Founded on Innovation. Anchored by Service.



Residential & Commercial Treatment Plants
- Concrete and rugged polyethylene material
- 500-1500 GPD Residential Systems
- 1500-300,000 GPD Commercial Systems
- Up to 800 GPD in plastic design
- A single moving part
- Innovative design for easy system servicing
- No filters to clog
- Lifetime exchange program

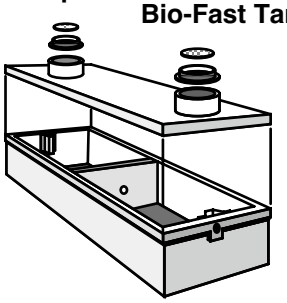
www.jetincorp.com • 800.321.6960 • email@jetincorp.com

Water Tight Structures
2 Compartment

Commercial Sizes - Gallons
2,000 - 3,000 - 5,000 - 6,000 - 8,000
10,000 - 12,000 - 15,000 - 18,000
20,000 - 25,000 - 30,000 - 38,000 - 40,000

Water Tight Construction
Tanks meet ASTM C1227 and C913

Septic Tanks - Sand Filters - Grease Interceptors
Bio-Fast Tanks - Nibbler Tanks



Nationwide Service

CREST *Precast, Inc.*
PCI & NPCA Certified Plant
1-800-658-9045

www.crestprecastconcrete.com info@crestprecastconcrete.com

SEE WATER® Inc.
Your Trusted Source for Control Panels

Simplex Control Solutions

Sim-A

Simple Simplex

3 YEAR LIMITED WARRANTY
SEEWATER, INC.

- Single & Three Phase
- Large Panel Selection
- 120/208/240/480 Systems
- Low Cost Solution
- Under 1 hp
- Single Phase 120V AC

www.seewaterinc.com | Phone: 888-733-9283

Cody Cummins levels Infiltrator Quick4 Plus low-profile chambers, while Gaston Montes prepares the ground for the remaining chambers for a system install.

"I credit my trusted employees for our success. They never take shortcuts and are vested in this company and its advancement."
Greg Mayfield

alarms," he says. "They've never heard of passive aeration or effluent filters. By educating them about components and how they differ in quality, they understand why our system costs $3,000 more than standard drainfields."

He also explains that some drainfields fail because contractors installed the minimum square footage – a common condition. A recent service call involved a new five-bedroom disability home with nine occupants and a 400-square-foot drainfield. It failed in 18 months.

"The flow required a 1,000-square-foot bed," says Mayfield. "Adding seven laterals 12 chambers long cost $6,000. Our regulatory system isn't working when owners have to pay for two drainfields in two years."

Each job concludes with Mayfield reviewing the final paperwork with the homeowners. His package includes a list of components with model numbers, a pamphlet on what not to put in the system, and an as-built AutoCAD drawing. "The health department uses a generic form to diagram systems less than 1,000 square feet," he says. "The tank is somewhere over here and the drainfield is out in that direction. Our customers and their service providers know exactly where everything is."

RESORT CHALLENGE

Keeping the service board full in the company's 1,200-square-foot shop/office often depends on the weather. In the dry season, systems behave and work slows, but problems reveal themselves during the June to September monsoons. "It's the worst time to repair systems, because we're fighting rain and smearing soils," says Mayfield. "Our inspectors exacerbate the situation by wanting the entire drainfield installed and open before they come out. That can compromise our work."

One such challenging install was replacing the drainfields at Sawmill Resort and Campground in Dade City, Florida. Eight septic systems were located around the park. Mayfield consolidated them into a 5,000 gpd system and a 2,000 gpd system, but no one knew which of almost 150 laterals connected to what tank.

The sanitary survey took a week to complete using a VIPER (Medit Inc.) inspection system. Two months later, Mayfield had his permit. "We hired a directional drilling company to shoot a 6-inch bore under two rows of mobile homes, through the easement and beneath roads to the dripfield, then pull back the return lines," says Mayfield.

Workers built the four-zone 5,000 gpd irrigation field on a sand pit containing primitive tent sites, then R.J. Ricardo of Element Landscape in Tampa laid sod. "We landscape properties to leave them looking better than before we excavated," says Mayfield. "If R.J. is busy, we team up with Mike Baltromitis and Travis Tooker of CLS Ground Care Co., in Port Richey."

EXPAND TERRITORY, DIVERSIFY

Being the go-to contractor for three mobile home companies soon had Southern Water crews in North Carolina. To handle the ample work, Mayfield occasionally teams with Steve Barry, president of AQWA in Wilson, North Carolina. "Inspectors here are more diligent and watchful than their Florida counterparts, enabling us to backfill what we install each day," says Mayfield.

Earlier this year, Southern Water installed its first system in Virginia, a 50-lot expansion at an RV park. Workers partnered with Cody Vigil of Infiltrator Water Technologies in Greenville, Virginia, to streamline the project.

Besides rapid infiltration basins, most commercial properties and resort parks also have stormwater ponds, and both clog eventually. The maintenance rocket went up for Southern Water when it saved a homeowner association $47,000. "They usually hired a dredging company hauling to a landfill," says Mayfield. "We were the first to drain the pond, rototill the muck, remove 12 inches, and raise and stabilize the banks with it. Then R.J. sodded everything."

The Villas at Spanish Oaks, a mobile home park in Ocala, Florida, required another innovative solution. Rains of 6 inches or more caused the stormwater pond to overflow, flooding the 6,000-square-foot clubhouse pavilion. After replacing the ruined floors, carpeting and walls for the third time since 2008, the owners wanted a solution.

"They couldn't enlarge the pond without displacing the surrounding lots and losing revenue," says Mayfield. He designed a bypass system pumping up 20 feet to a 77- by 45- by 90-inch-long drainfield that watered a common area. Installing 9,000 square feet (a half acre) of StormTech, a Division of ADS, chambers took almost three weeks. "The pavilion is safe now from everything but a hurricane," he says.

PLENTY OF OPPORTUNITY

Mayfield expects growth to continue as more park owners seek to consolidate multiple hodgepodge systems into one, or the clock runs out on residential drainfields and those undersized for the families they serve. "Despite an uncertain economy, repairs keep us busy," says Mayfield. "I credit my trusted employees for our success. They never take shortcuts and are vested in this company and its advancement."

MORE INFO:

Bear Onsite
877/653-4583
www.bearonsite.com

Geoflow Subsurface Drip
800/828-3388
www.geoflow.com

Infiltrator Water Technologies, LLC
800/221-4436
www.infiltratorwater.com
(See ad page 3)

Jurop/Chandler
800/342-0887
www.chandlerequipment.com

Medit Inc.
800/239-9934
www.fiberscope.net

Norweco, Inc.
800/667-9326
www.norweco.com

Orenco Systems, Inc.
800/348-9843
www.orenco.com

Plastic Tubing Industries
800/780-5121
www.pti-pipe.com

Robert Bosch Tool Corporation
800/301-8255
www.boschtools.com

StormTech, a Division of ADS
888/892-2694
www.stormtech.com

Tuf-Tite Inc.
800/382-7009
www.tuf-tite.com
(See ad page 23)

"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.

Installers working at construction sites must be aware of new OSHA confined space rule

By Doug Day

Workers in the construction industry now have the same confined space protections that those in manufacturing and general industry have had for more than 20 years. A new rule, effective Aug. 3, incorporates most of the general industry rule and includes several provisions specific to construction hazards.

Occupational Safety and Health Administration (OSHA) regulations for the construction industry used to have just a training requirement; employees working in confined spaces had to be instructed about the hazards, necessary precautions and the use of protective emergency equipment. The new rule has five key new requirements, according to information published by OSHA:

- Detailed provisions on coordinating activities when there are multiple employers at the work site to ensure hazards are not introduced into a confined space by workers performing tasks outside the space (for example, a generator running near the entrance of a confined space causing a buildup of carbon monoxide).
- A competent person must evaluate the work site and identify confined spaces, including permit spaces (those that may have a hazardous atmosphere, engulfment hazard or other serious hazard that can interfere with a worker's ability to leave the space without assistance).
- Continuous atmospheric monitoring whenever possible.
- Continuous monitoring of engulfment hazards. For example, when workers are performing work in a storm sewer, a storm upstream could cause flash flooding. An electronic sensor or observer posted upstream could alert workers at the first sign of the hazard.
- Allowance for the suspension of a permit instead of cancellation in the event of changes from the entry conditions listed on the permit or an unexpected event requiring evacuation of the space. The space must be returned to the entry conditions listed on the permit before re-entry.

Three other provisions of the new rule clarify existing requirements in the general industry standard:

- Employers who direct workers to enter a space without using a complete permit system must prevent workers' exposure to physical hazards through elimination of the hazard or isolation methods such as lockout/tagout.
- Employers relying on the aid of local emergency services must arrange for responders to give the employer advance notice if they will be unable to respond for a period of time.
- Employers must provide training in a language and vocabulary that the worker understands.

OSHA's online FAQ says companies that work in both construction and general industry will meet OSHA's requirements by following the new construction rule (Subpart AA of 29 CFR 1926). Employers should review the agency's website (www.osha.gov/confinedspaces/index.html) for more specific information on how the rule may impact them.

Work on the new rule began in 1994 when OSHA agreed to establish regulations specific to the construction industry when it settled a lawsuit concerning the general industry rule. OSHA estimates the rule will prevent 780 serious injuries and save the lives of five construction workers annually.

CALIFORNIA

The California Onsite Water Association is backing a bill to loosen the state's laws on the use of onsite water recycling systems. COWA says the bill protects public health while reducing barriers preventing the use of water-saving technologies as the state suffers from ongoing drought and water shortages. The bill, AB 1463, would require the State Water Resources Control Board to establish water-quality standards along with distribution, monitoring and reporting requirements.

In a letter to sponsor Assemblyman Mike Gatto (D-Glendale), COWA says more can be done to encourage the reuse of recycled water. "Our reuse laws were originally drafted many years ago, before the 30-plus years of technological advances in this rapidly changing industry. It is becoming more and more apparent that the regulations … are not keeping up with the changing world. Our current reuse regulations are possibly the most restrictive in the world and are a barrier to maximizing the use of our limited water resources."

The group recently changed its name in order to broaden its vision, dropping the term "wastewater" from its name. Now, to recognize the value of all decentralized onsite waters, COWA is encouraging more use of gray-, storm- and rainwater. The letter also supports legislation to allow the reuse of black water to help ease the state's water problems.

Meanwhile, the state has issued emergency orders to achieve a 25 percent reduction in the use of potable urban water from 2013 levels. Actions include replacing 50 million square feet of lawns and ornamental turf with drought-tolerant landscaping, a rebate program to replace inefficient household devices, a prohibition on the use of potable water irrigation of public street medians, new requirements to increase agricultural water savings, and investing in new technologies for businesses, residents, industries and agriculture.

NEW YORK

Legislators are asking the New York State Department of Health to conduct its own study of the public health and environmental effects of land-spreading biosolids from human waste. Some local governments are seeking to ban the practice, though there is disagreement over local

jurisdiction versus state law. The Department of Environmental Conservation has endorsed the practice, which requires a permit.

The Town of Wheatfield's ban on land spreading is now before the state's Supreme Court in a challenge filed by Quasar Energy Group, which operates an anaerobic digester in the town. At least 15 state legislators are seeking a health department study that is independent from those already conducted by DEC, the U.S. Environmental Protection Agency, and Quasar that found the practice to be safe.

OHIO

Taking cues from cleanup efforts for the Chesapeake Bay region, the idea of a regional water authority is being discussed for northwest Ohio, northeast Indiana and southeast Michigan to protect Lake Erie. The action is one recommendation in a new report, *Moving Forward: Legal Solutions to Lake Erie's Harmful Algal Blooms*.

The report from the Lucas County commissioners also recommends new rules for farms and wastewater treatment plants and funding to help county health departments enforce onsite wastewater systems. While algae blooms are natural on Lake Erie, they have been a major issue since 2003. Toledo's drinking water system was shut down in August 2014 due to the presence of toxins, leaving a half million people without water for two days. There has been no formal recommendation to form the water authority at this point.

In April, Republican Gov. John Kasich signed legislation increasing the regulation of farmers and the state's largest wastewater treatment plants to help improve water quality. There are not yet any plans for how to pay for the steps needed to meet the new regulations. Farmers may have to build manure storage facilities due to the ban on land spreading on frozen or rain-soaked fields. The state plans to seek voter approval of a bond issue to provide funding assistance, including repairs to faulty septic systems.

MARYLAND

Maryland has upgraded 6,550 septic systems to the best available technology through the Chesapeake Bay Restoration Fund since 2010. Nearly 3,800 systems are in critical water-quality areas, according to the Bay Restoration Fund Advisory Committee annual report issued earlier this year. The new systems must be inspected and maintained annually. There are about 420,000 septic systems in the state, with 52,000 of them in critical areas.

Enhanced nutrient removal upgrades have also been completed at 35 major wastewater treatment plants with another 20 under construction, 10 in the design phase and two more in planning. All but five of the state's plants are expected to be upgraded by 2017.

NOVA SCOTIA

The Nova Scotia Environmental Home Assessment Program has been defunded by the provincial government this year. Launched in 2006, it provided home assessments of water and wastewater systems, $100 rebates on septic pumping, and grants up to $3,000 for repair or replacements of failed septic systems. Grants awarded last year will be honored if the work has not yet been completed. It was among the programs cut to fill a $97.6 million provincial budget deficit.

IDAHO

The state's Department of Environmental Quality is considering more changes to onsite wastewater regulations. After updating its rules a few times last year, the agency is now recommending changes involving floating vault toilets and vessel sewage disposal, specifications for pit run material, and secondary biological treatment system hydraulic application rates. The recent updates to the *Technical Guidance Manual for Individual and Subsurface Sewage Disposal Systems* are intended to ensure the document reflects current public health standards.

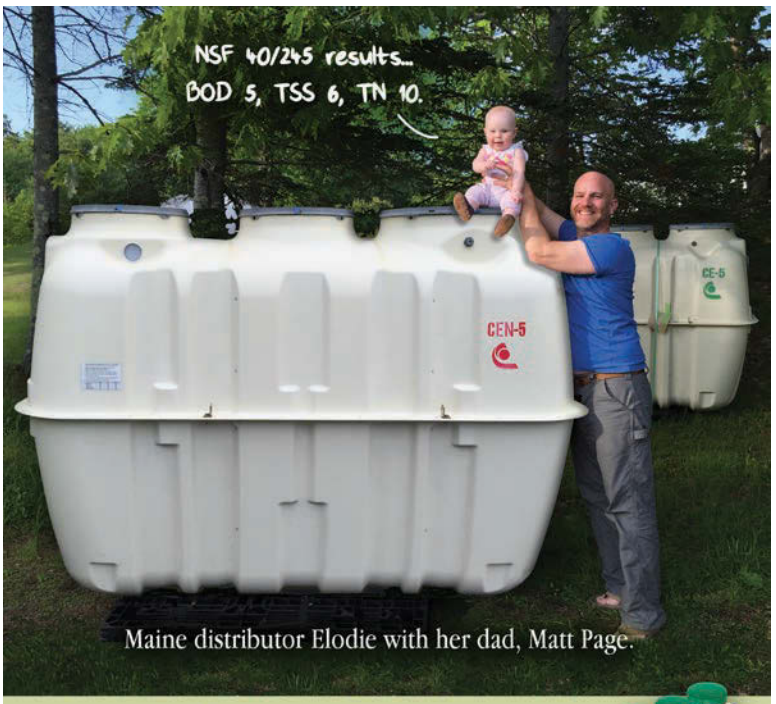
ALASKA

The state's Department of Environmental Conservation has proposed several changes to onsite wastewater regulations. While mostly a housecleaning move to correct minor errors and update obsolete information, the effort will also include a new *Installer's Manual for Conventional Onsite Domestic Wastewater and Disposal Systems*. In its public notice, the agency says the manual is being "substantially reorganized and updated" to make it more usable as a field guide. It will also be renamed *Onsite Wastewater System Installation Manual*. Meetings, hearings and the public comment period take place this spring with final approval to follow.

LIKE SOMETHING? HATE SOMETHING? AGREE? DISAGREE?

Share your opinions about *Onsite Installer* articles through our Letters to the Editor.

Send a note to editor@onsiteinstaller.com | onsite installer



Maine distributor Elodie with her dad, Matt Page.

FujiClean USA™

World's #1 onsite treatment system.

U.S. distributor opportunities available. 207-406-2927 / 860-304-6110

www.fujicleanusa.com

That's a Wrap!

Eye-catching truck and equipment graphics can supercharge your marketing efforts and protect vehicle finishes at the same time

By Ed Wodalski

Vinyl vehicle wraps seem to be everywhere these days – on buses, trailers, cars and delivery vans – so why not on your trucks or equipment? Wraps can serve as a constant reminder of the services you offer. And if you don't like the look of your black truck – no problem – just wrap it in blue. Clear wraps can also add an extra layer of protection to your vehicle's finish.

Upgrading the look of your trucks and equipment doesn't have to be expensive. Prices can range from $100 for a simple name or logo to $3,000 or more for a full vehicle wrap. Cost often depends on the amount of surface covered and complexity of the surface being wrapped – is it straight and flat, or does it have a lot of concave and convex surfaces?

The final wrapped truck took on a striking new look. (COLE Publishing photo)

Think of a wrap as a large vinyl graphic applied directly over the original paint of your vehicle. However, unlike paint, it can easily be updated or removed, returning your vehicle to its original appearance at trade-in time.

Wraps are made from cast or calendered film and can last up to seven years. The main difference between cast and calendered film is stretchability.

"A lot of people are doing Facebook and social media ... We also suggest where to place logos and graphics. If it's on a curved surface it can distort lettering. We try to suggest good visible places."

Ryan Koth

Calendered film is best suited for flat applications, while cast easily negotiates curves and contours.

Vinyls are also available in various textures – such as brushed steel – that paint can't simulate, says Ryan Koth, owner of Wrap Right in Tomahawk, Wisconsin, who covered a showpiece truck displayed at the 2015 WWETT Show.

Depending on complexity and size, it can take up to a week to design, produce and install a wrap. But once designed, it only takes the push of a button to duplicate. Koth says wraps have grown in popularity in the past

MOBILE MARKETING

- Depending on locality and mileage, a single branded vehicle can generate between 30,000 and 70,000 impressions a day, more than many contractor websites will see in a month.
- A study by the American Trucking Association showed 98 percent of respondents believe fleet graphics create a positive brand image, 96 percent notice ads on vehicles and 75 percent formed impressions about a company and its brand through fleet graphics.

decade, primarily because of the ability to reproduce almost anything.

"When vinyl graphics started coming out and you wanted multiple colors, you would take a stock color vinyl and each color would be a different layer of vinyl," he says. "Now we can print that on one sheet."

Designs are drawn on a computer and placed on a template that provides an accurate measurement of the year, make and model of the vehicle. It also calculates the amount of material needed. Koth suggests businesses incorporate their logo, phone number and Web address into the design, as well as color schemes.

"A lot of people are doing Facebook and social media, too," he says. "We also suggest where to place logos and graphics. If it's on a curved surface it can distort lettering. We try to suggest good visible places."

Final designs are sent to a large-format digital printer and laminated.

"All vinyls are laminated," Koth says. "What that does is protect the inks printed on the vinyl from fading in the sun. It gives it a longer life span and protects against small scratches and abrasions."

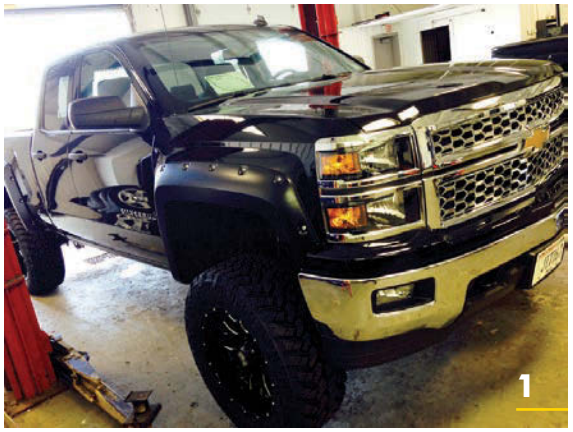
The durability of a wrap depends on how it's maintained. "If it's in the sun all the time, typically it will have a shorter life span than if it was kept in the garage," says Koth, who advises customers to keep their wraps clean and avoid automatic car washes.

"With full wraps it's not that big of a deal because everything is covered," he says. "But if you have graphics with edges, that's where an automatic car wash can get under the wrap and take it apart. If you're hand-washing it, you won't have a problem."

Koth also advises using soap and water to quickly clean up fuel spills that splash the wrap.

While almost anything can be wrapped, new vehicles work best. Wraps do not stick to rust, and chipped or blistered paint can pull off when the wrap is removed. Like a skintight Speedo, wraps accentuate the smallest imperfection. Vehicles also must be free of dust, mud and wax before they are wrapped. Should a portion become damaged, it can be replaced without rewrapping the entire vehicle.

"I've had customers who have hit deer," says Koth, who keeps copies of designs on file for two years. "I just did a truck where someone had backed into his doors in a parking lot. So that's another plus of what we can do with the vinyl, and we can match it exactly."

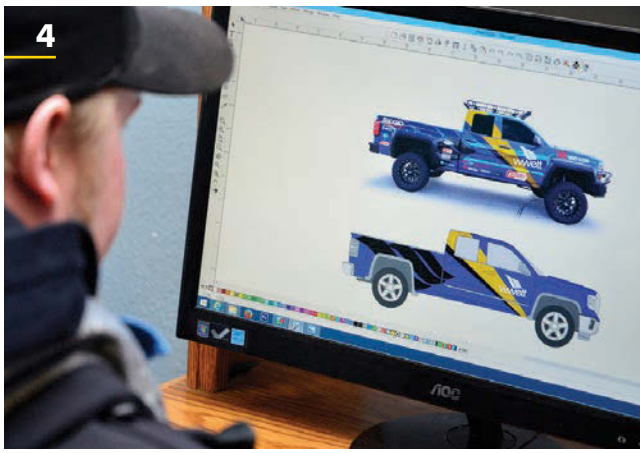


1. The brushed blue and gold WWETT Show truck began as a black 2014 Chevrolet Silverado 1500 4 x 4 extended cab. (COLE Publishing photo)

2. Wraps are made from cast or calendered film and have a life span of up to seven years. Calendered film is best suited for flat applications, while cast easily negotiates the curves and contours of a front fender. (COLE Publishing photo)

3. Ryan Koth, owner of Wrap Right in Tomahawk, Wisconsin, applies a vinyl wrap. (Photo by Ed Wodalski)

4. Ryan Koth uses a computer template to create a final design and estimate the amount of material that will be needed to wrap the truck. Should the wrap become damaged, Koth can pull up the files and print a patch. (Photo by Ed Wodalski)



A full-throttle wrap

Follow the link to see how a NASCAR team gets 'er done: http://joegibbsracing.com/category/videos/car-wrap-videos

The installation took place next to the clubhouse, visible at left, and near the Buzzards Bay waterfront. (Photos courtesy of Arne Excavating LLC)

Avoiding the Water Hazard

A Massachusetts installer works around fairway placement, waterfront worries and a busy clubhouse to build an onsite system that's a hole-in-one

By David Steinkraus

South of Boston is a peninsula that juts into the Atlantic Ocean, and on the end of the peninsula is the Kittansett Club, country club and golf course. Recently the golf club's septic system needed to be replaced — but not until the club closed for the winter.

The aging system had trenches filled with stone, and it was probably installed sometime in the 1980s, says James Arne, owner of Arne Excavating LLC, the firm hired for the replacement project. When the drainfield failed, the septic tanks at the club building essentially became large holding tanks.

"This was the biggest job we had tackled up until that time, and it took every piece of equipment we had."
James Arne

"As pumping became more frequent, the club decided it needed a long-term solution," Arne says.

Local firm CLE Engineering Inc. designed the new system, which had to handle waste from the pro shop and from the main building. Both have bedrooms on their second levels, two in the pro shop and seven in the main building. There is also a 244-seat restaurant, 42 lockers with showers and a 5,000-square-foot retail store.

TWO BIG TANKS

From the pro shop, wastewater flows through a 4-inch pipe into a 1,500-gallon two-compartment septic tank and then into a 1,000-gallon pump chamber. Two Liberty 1/2 hp pumps working alternately send the wastewater about 200 feet through a 2-inch force main into a 10,000-gallon pump chamber in front of the main building.

All the new tanks are concrete, and all came from Acme Precast of Falmouth, Massachusetts.

Wastewater from the clubhouse is divided into two streams. The kitchen has its own 4-inch line leading to a 2,500-gallon grease trap. The trap outflow is another 4-inch pipe that discharges into the main 18,000-gallon tank. Wastewater from the rest of the clubhouse moves into the 18,000-gallon tank through a 6-inch pipe.

SYSTEM PROFILE

Location:	Marion, Massachusetts
Facility served:	The Kittansett Club, country club and golf course
Designer:	CLE Engineering Inc.
Installer:	Arne Excavating LLC
Type of system:	Septic tanks feeding a GEO-flow system
Site conditions:	Sandy loam, rocky soil
Hydraulic capacity:	4,320 gpd

ABOVE: The tank arrangement for the Kittansett Club is visible here. In the foreground is the 10,000-gallon pumping chamber. Behind that is the 18,000-gallon septic tank that serves the clubhouse. Buzzards Bay, an arm of the Atlantic Ocean, is about 100 feet beyond the clubhouse.

BELOW: With the tunnel tank assembled at the Kittansett Club, workers pack earth against both ends of the tank. The weight of the earth helps push the tank sections together.

From the 18,000-gallon tank, effluent flows through a 6-inch line equipped with a Polylok Inc. / Zabel A-100 effluent filter and into the 10,000-gallon pump chamber. The tanks are topped with about 12 inches of concrete for ballast because of the shallow water table.

In the 10,000-gallon tank are a pair of Liberty 2 hp pumps controlled by a duplex panel. These send effluent through about 800 feet of 3-inch force main to the drainfield, which is set back about 1,000 feet from the water and tucked between fairways for the club's 18th hole.

The drainfields are each about 110 feet long and 50 feet wide, and combined they have about 5,600 feet of GEO-flow pipe. The pipe sits on 6 inches of C33 coarse washed sand. There is 12 inches of sand around the pipes and 6 inches of sand on top.

Pipes from the pro shop to the pump chamber and from the chamber to the drainfield were laid with a high point in the middle so water will return under gravity to the tanks or the drainfield. The long force main to the drainfield is also equipped with a dual-body relief valve to prevent airlocks in the pipe.

WAITING FOR WINTER

Because the project could be done only after the golf club had closed for the season, careful scheduling was critical, Arne says. Some design changes and meetings delayed the projected start from November into December, but frost is rarely deep in this part of New England, and his guys can work through most winters.

RIGHT: A crane lowers one section of tunnel tank for the Kittansett Club in Marion, Massachusetts. The clubhouse is visible behind the crane.

BELOW: The system at the Kittansett Club is composed of about 5,600 feet of GEO-flow pipe. Six inches of sand is below the GEO-flow, 12 inches around the laterals and 6 inches on top, but the poor quality of the soil meant Arne Excavating also replaced 2,500 cubic yards of soil below the bed.

"Once we started, we went straight at it for about six weeks," Arne says, "and to start with we had quite a time getting the old field and system dewatered."

The crew pumped the old septic tank, then turned to the drainfield. Arne used gravity to help. He dug a trench across one end of the laterals and made a deep hole at one end like a sump pit. When he removed the earth between his trench and the drainfield, all the water flowed into the trench and his pit where it could be easily removed. His truck pulled out 6,000 gallons. The water table is about 4 feet below grade, so the old septic tanks were sitting in water. They were broken up with an excavator swinging a boulder.

"Because these native soils are the way they are, we do a lot of excavating and replacing soil. It's not uncommon for us to dig 8 or 10 feet below grade and then elevate a system 4 feet above grade so there's good treatment in the soil."
James Arne

The big new tanks installed in front of the clubhouse are tunnel tanks. They're very popular in New England and consist of square, cast sections each about 11 feet tall, 12 feet wide and 4 1/2 feet deep. A crane drops sections into place until the tank is as large as specified. For the 18,000-gallon tank, that meant nine sections. Sections were bolted together on the inside, and each section was sealed to its neighbors with CS-102 butyl rubber sealant from Concrete Sealants Inc. Edges were prepped with a primer, and then the formed rubber was set in place and pressed with a roller to ensure adherence. When the tank was assembled, the crew piled dirt on each end so the weight of the earth pushed the sections together.

Workers had to be careful installing the tanks outside the pro shop and running the pipe from them to the main tanks. The club has a nice lawn in this area and wanted as little disturbance as possible. Arne achieved this in part by reusing about 80 feet of the old 4-inch pipe that had serviced the pro shop. His crew slipped the new 2-inch force main inside the 4-inch pipe. The crew used the company's tracked Yanmar mini-excavator to complete the remaining earthwork.

"This was the biggest job we had tackled up until that time, and it took every piece of equipment we had," Arne says. That meant the two 45,000-pound Terex excavators, Caterpillar D3 bulldozer, the Yanmar mini-excavator, Case backhoe, a tracked Bobcat T200 for finish grading and cleanup, and a John Deere front-end loader.

A few trucks were hired to bring in sand for the drainfield. Existing soil in this part of Massachusetts is poor, containing a lot of rocks. "Because these native soils are the way they are, we do a lot of excavating and replacing soil. It's not uncommon for us to dig 8 or 10 feet below grade and then elevate a system 4 feet above grade so there's good treatment in the soil," Arne says. In the case of the golf course drainfield, that meant replacing native soil with about 2,500 cubic yards of perc sand before building up the drainfield with C33 sand.

One piece of special order gear for the job was a spring-loaded aluminum hatch about 3 1/2 feet by 2 1/2 feet. This was installed in the top of the 10,000-gallon pump tank and directly above the two Liberty pumps. Each pump weighs about 100 pounds, and they were installed side by side on rails so they can be lifted out through the hatch for service.

INVISIBLE SYSTEM

When the final connections were complete, the job still wasn't quite done.

"After we finished installing the system, we worked with the golf course on the soil that covers the drainfield. It's about 5 or 6 feet above grade, and it needed work to blend well into the club's landscape. We put some berms on it and shaped it up. When you stand and look at the drainfield now, you don't even see it."

MORE INFO:

Concrete Sealants, Inc.
800/332-7325
www.conseal.com

Liberty Pumps, Inc.
800/543-2550
www.libertypumps.com
(See ad page 2)

Polylok, Inc. / Zabel
877/765-9565
www.polylok.com
(See ad page 44)

TUF-TITE®

For a Complete Catalog and Pricing
Call 1-800-382-7009

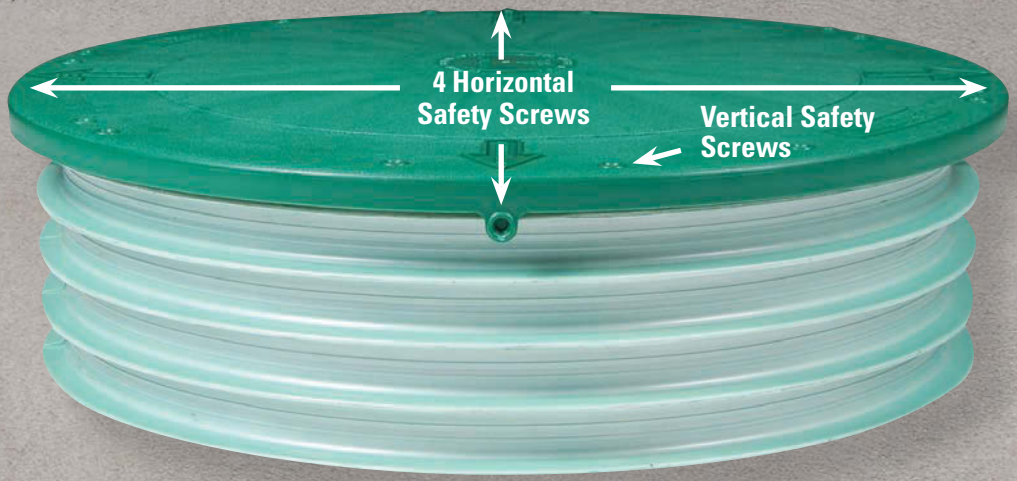
24" HEAVY DUTY MULTI-PURPOSE FLAT RISER LID

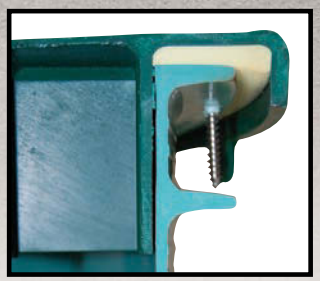
FREE FREIGHT on Full Cartons!

Fits most commercially available:

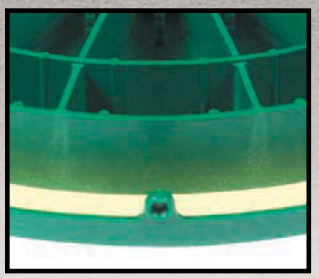
- Risers
- IPEX PVC Ribbed Pipe
- Corrugated Pipe

LID MAY BE USED WITH OR WITHOUT CONCRETE CENTER





Secured by 6 Vertical and 4 Horizontal Safety Screws. Screws Included.



Foamed-in Permanent Polyurethane Gasket.

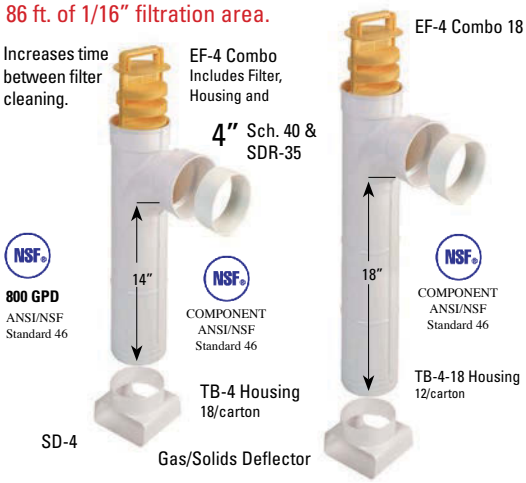
Holds up to 70 lbs of Concrete for Added Safety.

Water-**TITE**™ Joint

Vertical and Horizontal Safety Screws

4" Effluent Filter and 4" T-Baffle™

86 ft. of 1/16" filtration area.



4" Effluent Filter EF-4

One-piece effluent filter fits in 4" Sanitary Tee.

- Injection molded PolyPro
- Simple to install - Easy to clean

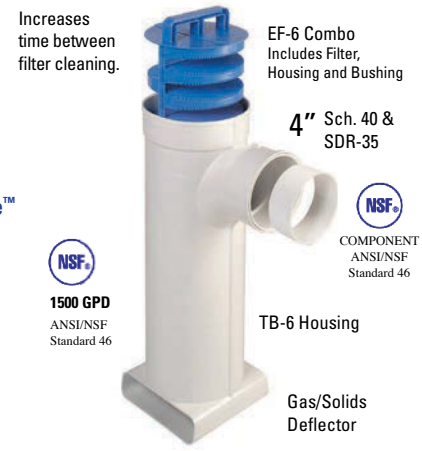
4" Sanitary Inlet/Outlet T-Baffle™

Injection molded T-Baffle™.

- Injection molded T-Baffle
- Fits 4" Sch. 40 and SDR-35 pipe
- Simple to install
- May also be used as Inlet & Outlet Tee

6" Effluent Filter and 6" T-Baffle™

244 ft. of 1/16" filtration area.



6" Effluent Filter EF-6

One-piece effluent filter fits in 6" T-Baffle™.

- Injection molded PolyPro
- Simple to install
- Easy to clean

6" Sanitary T-Baffle™

Injection molded T-Baffle™.

- Injection molded
- Fits 4" Sch. 40 and SDR-35 pipe
- Simple to install
- May also be used as Outlet Tee with Solids Deflector

TUF-TITE®

Tuf-Tite®, Inc. 1200 Flex Court, Lake Zurich, IL 60047

www.tuf-tite.com | 800-382-7009

© 2013 Tuf-Tite®, Inc.
All rights reserved.

Jim Anderson, Ph.D., and David Gustafson, P.E., 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 Technicians. Readers are welcome to submit questions or article suggestions to Jim and David. Write to ander045@umn.edu.

Climate Change and Onsite Systems

A melting polar ice cap, rising water levels and frequent precipitation events may change the way we install systems, especially in coastal regions

By Jim Anderson and David Gustafson

The impact of climate change on septic systems is a topic that has come up a couple of times in the past year during the workshops we've conducted. This is a difficult question, because neither of us has a crystal ball and can predict what will happen in the future. However, we can discuss a couple of long-term trends being talked about and provide some insight to what may happen if they continue.

Overall temperature on a global scale is increasing. This is melting polar ice and raising the sea level. This will continue if the current trend continues. For us in Minnesota, this seems far off both in distance and in time, so we are more worried about how cold it is this winter and how much snow we will receive. This is related to the day-to-day weather challenges we always have to deal with. However, if we lived in a coastal area, the threat of overall sea level rising would get our attention.

As temperature increases, overall respiration of soil organisms increases, so less oxygen is available in the soil profile . . . Less oxygen would mean the potential for more denitrification, which would be good from a nitrogen standpoint, but there would be less treatment potential for pathogens and some other contaminants.

COASTAL THREAT

Onsite systems are numerous in low-lying areas along the East Coast and Gulf Coast. Conventional gravity-to-drainfield or pressure-to-drainfield systems assume a certain separation distance between the bottom of the drainfield trenches and the seasonal high-water level to provide for treatment. As the water table rises, the separation distance will diminish, so these systems will operate less efficiently and, in the extreme cases, become inundated by the high water levels and flood out. As providing separation distance becomes more difficult, other technologies will be considered to either raise the level of the system or provide more treatment before being discharged to the environment.

Another aspect of overall warming is that it will change not only the amount of precipitation but also how that precipitation occurs. It is projected that precipitation in humid regions will not only increase but will involve more large precipitation events; think intense summer storms and large snowfall events in the winter. If this occurs, even we in Minnesota are not off the hook from the consequences.

With increased amounts of water, lake levels rise, both on inland lakes as well as the Great Lakes, and the issue with seacoast areas plays itself out on our lakeshores. Rising water tables interfere with our onsite systems, making it necessary to move to other technologies to provide adequate wastewater treatment.

THE COMING FLOODS

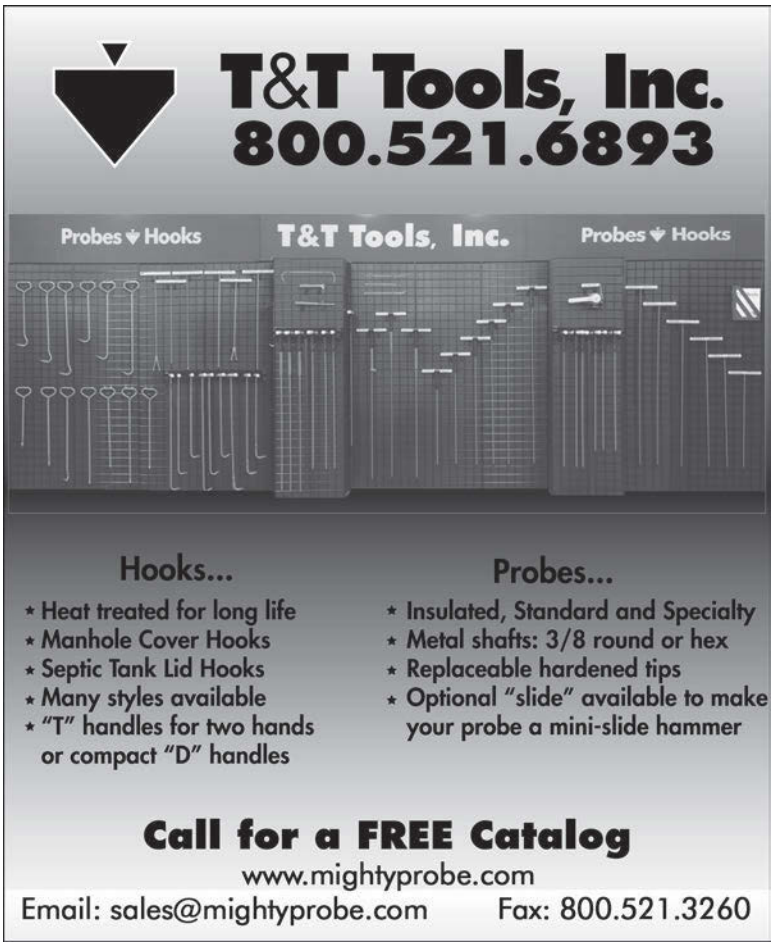
Another aspect of increased precipitation events is a corresponding increase in localized flooding events. So systems located in or near floodplains would likely be subjected to an increase in flooding frequency and homeowners needing to deal with fixing or repairing flood damage. Similarly, larger flood events will probably mean more damage to the systems, requiring total system replacement. In any event, the cost of the systems would increase and probably drive a move again to different technologies to address the problems.

Research is underway to determine the impact of overall increasing temperatures on soil treatment of different contaminants of concern. As temperature increases, overall respiration of soil organisms increases, so less oxygen is available in the soil profile. Here the researchers feel the effects may be mixed in nature.

Less oxygen would mean the potential for more denitrification, which would be good from a nitrogen standpoint, but there would be less treatment potential for pathogens and some other contaminants. Then, of course, how does this change with the interaction with precipitation? So it is a difficult research problem. This too would indicate the need to move to more advanced technologies, though, to handle more of the treatment on the front end rather than relying solely on the soil.

RAINWATER REUSE

In addition to Minnesota, we do quite a bit of work in Arizona and New Mexico. In the desert regions, the picture is different, but the way we deal with the change may be similar. Under the current climate change scenario,



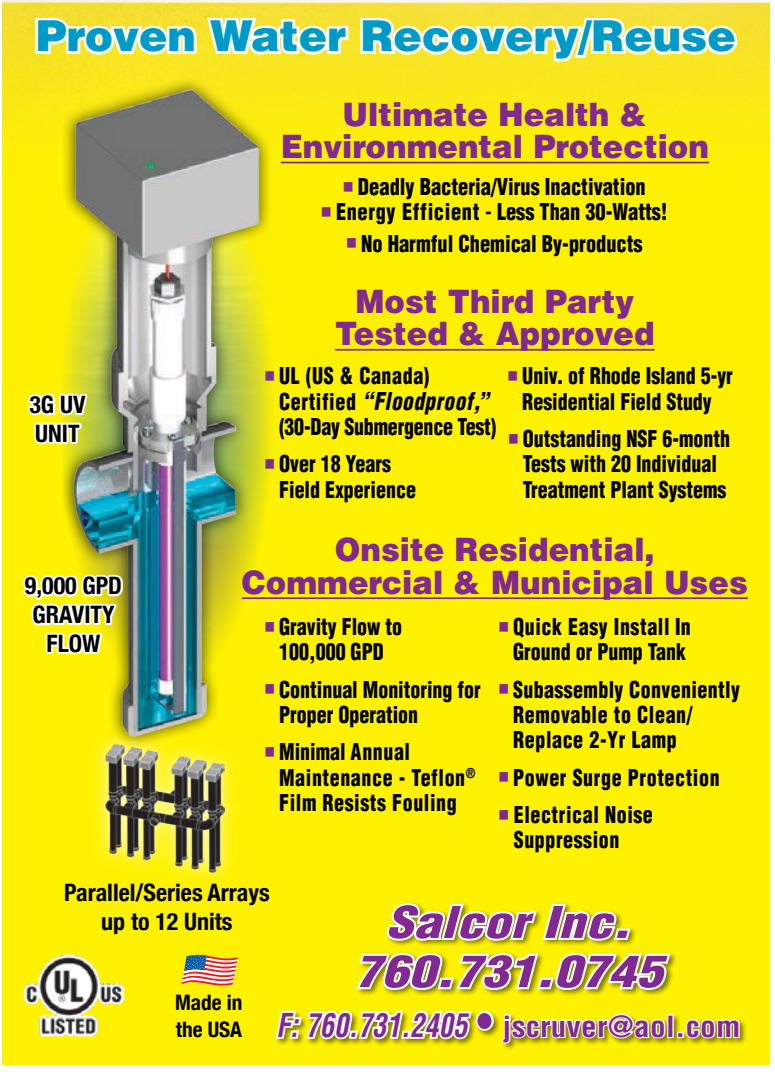
the Southwest will have more and prolonged periods of drought along with temperature increases. In addition, precipitation events when they occur are likely to be more severe; large amounts of localized rainfall in a short period of time.

Prolonged drought periods will push the move already underway in these locations to capture, treat and reuse water leaving the house as sewage. This includes separating out not only the toilet waste from the laundry and bath, but also separating urine from the component that includes the feces. Initially the treated water will be used for things like landscape irrigation. But if conditions persist or worsen, we will probably see the use of more systems that recycle water back into the house to flush toilets. Again, the conditions will make a move to more advanced technologies more likely and more prevalent.

Additional intense precipitation events will also put stress on treatment systems from washouts and flooding. Additional precautions will be needed to protect systems from excess water running onto the site and taking the systems out.

We cannot say how quickly these conditions will occur. But no matter your role in the industry, planning now in anticipation of the problems is not only prudent but good business. Being educated and informed about advanced technologies and being able to work on them is a sound track to take for the future. If none or only some of what is projected actually happens, you will be in a position to react and anticipate the needs of your clients.

HAVE A STORY IDEA?
Email us at editor@onsiteinstaller.com



wwett spotlight

Pre-engineered Simple Simplex controls from See Water fit a variety of onsite and industrial applications

By Craig Mandli

As installers tackle onsite systems requiring a range of components, flexibility is key. The ability to use pre-engineered components implemented in a variety of applications is critical. See Water, a manufacturer of pump control systems for the water and wastewater industry, introduced new Simple Simplex alarm and pump control panels with that idea in mind.

The Simple Simplex line of controls is designed for single-phase pump applications under 1 hp, with applications including sewage pump chambers, sump pump basins, lift stations and onsite installations.

"Pre-engineering the line is key," says Eric Wallace, the sales manager for See Water. "This line is designed to be a fit for residential, commercial and industrial pumping applications. They can be used in everything from onsite ATUs to lift station sewage pump chambers."

There are three models in the line. SSP-1 and SSP-2 control panels have two- or three-float operation and are designed to alert of a high liquid level and control a 120-volt pump. The SSP-2 adds a hand-off-auto toggle switch, green pump light and high-liquid alarm dry contacts. The SSP-3 Plugger control panel will alert at high liquid level and includes a 120-volt receptacle for simple installation of the pump and pump switch. The controls are housed in an 8- by 6- by 4-inch NEMA 4X indoor/outdoor polycarbonate enclosure with lockable latches. Each system comes standard with high-liquid alarm components, including a red beacon light, 85-decibel buzzer at 10 feet, and alarm test and silence buttons. The panels and controls are UL listed.

"If a tech or installer has an issue with control or monitoring a single-phase application, we have something that can help," says Wallace. "The Simple Simplex line is a fit across so many of those applications."

Options include an additional high-level alarm (high-high level), low-level alarm, 9-volt battery backup for the alarm circuit and cord lengths greater than 20 feet. "The options make it easy to suit toward a specific application without having to special order a specific control," says Wallace. "Because it's pre-engineered, maintenance is also easier, as components are more readily available."

Eric Wallace, left, sales manager with See Water, discusses the new Simple Simplex line of pump alarms and controls with an attendee at the 2015 WWETT Show. (Photo by Craig Mandli)

The 2015 Water & Wastewater Equipment, Treatment & Transport (WWETT) Show was See Water's first as an exhibitor. Wallace says his goal coming into the week was to introduce attendees to his company and product offerings, as well as gain contacts in the onsite installation industry.

"We've been able to talk with a lot of contractors and several distributors as well," says Wallace. "The excitement we see from the attendees definitely gets us excited to come back next year."

Wallace says the WWETT Show is a good fit for See Water, and that the conversations he and his staff had at the show will go a long way toward future company offerings.

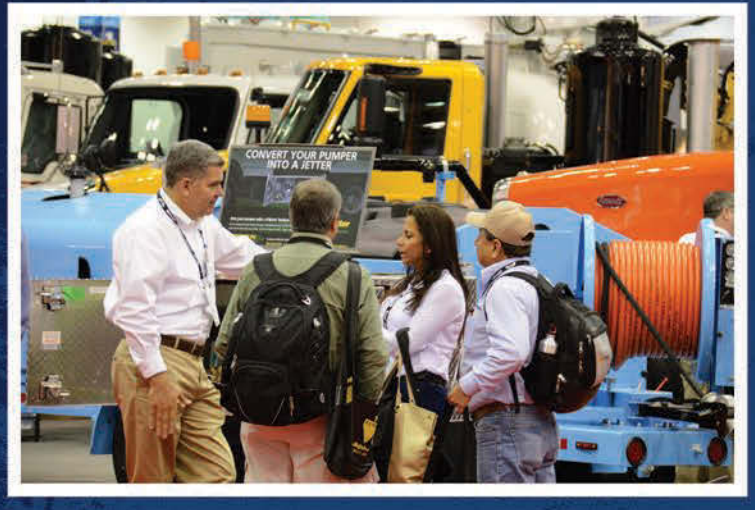
"The problems that customers and potential customers present to us at the show give us solutions to go after for next time," he says. "This industry is very innovative, which is a big reason See Water is a great fit for it. We like coming up with solutions." **888/733-9283; www.seewaterinc.com.**

Network.

10,000 Attendees from 53 Countries

Learn.

Over 80 Educational Sessions



Profit.

Ideas to Boost Profits

www.wwettshow.com | 866.933.2653

Feb. 17-20, 2016
Indiana Convention Center

wwett16

Water & Wastewater Equipment, Treatment & Transport Show

The Golden Gophers of Onsite

The Minnesota Onsite Wastewater Association prides itself on teamwork with regulators and educators to promote and improve septic service

By Doug Day

Streamlining wastewater codes for onsite systems used seasonally and tweaking impractical licensing requirements for septic system inspection and repairs are among initiatives being addressed by the Minnesota Onsite Wastewater Association in 2015.

MOWA represents all onsite wastewater professionals in the state as a nonprofit business association. Founded in 1975, it has about 1,000 members representing around 200 businesses and organizations, from installers, pumpers, designers and inspectors, to soil scientists, engineers, regulators, educators, manufacturers and suppliers. Brian Koski is the group's current president.

How do you develop your annual strategies?

Koski: We have a planning meeting every year, and that's where we, as a board of directors, set our goals. We talk about the challenges we face as an organization or industry, prioritize them, and go to work on the top three or so. We also go through last year's goals and what we accomplished. I've been on the board for five years and we generally accomplish what we set out to do.

What are your goals this year and how did you do last year?

Koski: A few of our goals for 2014 included establishing a grant foundation for nonprofit groups that needed help updating failing septic systems. That foundation was established last year. Applicants may receive labor and financial support from MOWA to help them get a septic system update completed.

We also wanted to make a better effort to recognize members who have been involved in the industry and have made a significant impact in our state. Three of our long-term members received legacy awards at our winter conference. All three have been in the industry and involved with MOWA for more than 30 years, in which time they contributed more than their fair share on a volunteer basis.

At our strategic planning session, we decided as a board that continuing to improve our summer seminar and winter convention were near the top. Also, continuing to follow through with our legislative efforts is important.

What are the issues facing Minnesota's onsite industry?

Koski: There are several legislative hot topics. A big one is seasonal businesses such as resorts and campgrounds that are facing some challenges with the way our current code is written. They may have to comply with some stringent rules even though they are seasonal operations. We are working on that right now.

Brian Koski,
president of the
Minnesota Onsite Wastewater Association,
320/983-2447 or brian@septiccheck.com
MOWA

When the code was updated in 2008, it created three levels of designers: basic, intermediate and advanced. You need an advanced license to work on large or difficult systems with things like pretreatment. The number of people who have that license is pretty small, so it's hard in a lot of counties to find contractors who can do the work. The Minnesota Pollution Control Agency (MPCA) is working on revising who can do what. We hope to provide input on this subject as well.

> **"We have to look at nutrient removal and making sure that if we're putting a lot of water into a small area, that by the time it reaches the groundwater, it's safe to drink. Maybe pharmaceuticals in the water will become something we have to address through system design."**
> **Brian Koski**

Another one deals with people whose certifications lapse or who don't get their continuing education in the three-year window. They not only lose their license and are out of work, but they have to retake all the tests again. It's a pretty severe penalty, so there's some talk of revamping that to maybe allow a grace period.

The MPCA is involved in all of those issues, so we're working closely with them on solutions.

Your Wastewater Treatment System Shouldn't need Mission Control to run it!

Eljen GSF... Affordable and Non-Mechanical Treatment Solutions

- Passive dual filtration equals affordable performance with little to no maintenance.
- Compliant with NSF/ANSI Standard 40.
- 30 Years of continued industry success.

GSF®

Simple, Effective, Easy to Use.

eljen CORPORATION

Innovative Environmental Products and Solutions Since 1970

1-800-444-1359 eljen.com

How is the relationship with regulators?

Koski: We've worked hard the last six to eight years to really improve the relationship, and I think we've accomplished that. They generally reach out to us for our stance on issues, which is nice. It's challenging to come up with a consensus of all the parties, but trying to work together, side-by-side, is more effective.

In the last two years, we had a pretty complicated issue involving the sewer line from the house to the septic tank, which falls under the plumbing code and really wasn't enforced that much. As far as inspecting that part of the septic system, it was never really done. There were also issues with jurisdiction. The Department of Labor and MPCA were involved along with several other agencies. There was a lot of jurisdictional overlap that made it complicated. One of our board members, Nick Haig, also works for MPCA. He and others in the agency spent a lot of time and energy working on that, and they are nearing a solution that will streamline the process.

What kinds of issues do you see ahead of you in Minnesota?

Koski: At our conference (last) January and in 2014, there was a lot of talk and we had presentations about groundwater issues, drought, aquifer levels dropping and things like that. Not only do we have to be seen as part of the solution, but also be a voice about how things are handled through rulemaking.

One of the things I think we can contribute is making sure that the water we put back into the ground is properly treated. Especially with the larger systems, we have to look at nutrient removal and making sure that if we're putting a lot of water into a small area, that by the time it reaches the groundwater, it's safe to drink. Maybe pharmaceuticals in the water will become something we have to address through system design.

You have the University of Minnesota Water Resources Center. What's that relationship like?

Koski: They have long been seen as one of the leaders in education for the onsite industry. You see their instructors going all over the country speaking at conferences, and that really shows that they're seen as respected leaders. They do the majority of the continuing education in Minnesota and also put on the licensing courses.

We have had input on the courses, what goes into them and how they can be improved. The courses are pretty well developed now, so we don't have as much input as we did in the past. When the new licenses came about, we had a lot of discussion on the training and design guidance. One of the things we'd like to see is more online courses and training that is more accessible so companies can train their own employees.

We've always had a really close working relationship with them, and they're heavily involved with our conference. The education at our winter conference is top-notch, along with the networking opportunities. We normally have about 200 people attending and offer more than a dozen classes for continuing education. We also have a one-day summer soils seminar.

What unique services do you provide for members?

Koski: We have a group business insurance plan that spreads the risk among everybody who participates. It's very economical, and if we do well, we generally get a distribution back at the end of the year. It has more than paid for itself.

One service that we're really proud of is our bimonthly newsletter. *The Little Digger* is on our website (www.mowa-mn.com) and is very informative, about 18 to 20 pages, and focuses on the science and technology of onsite wastewater, along with industry concerns.

Large Scale and Commercial Treatment Systems

By Craig Mandli

These treatment systems and accessories are designed to handle large wastewater flows. Learn more about what each manufacturer offers here:

ATUs

Bio-Microbics MyFAST HS-STP

MyFAST HS-STP (High-Strength Sewage Treatment Plant) wastewater treatment systems from **Bio-Microbics** use an enhanced aeration pretreatment zone. Simple in design and easy to install, they add LIXOR XD Submerged Aeration Systems and MyTEE Grit Vaults as an effective pretreatment zone to reduce BOD and TSS levels for better sludge management in the treatment zone, according to the manufacturer. Engineered to fit most residential and commercial property applications, systems provide alternative wastewater treatment options for those residing outside the reach or in lieu of municipal treatment plants. The system has a 100 percent submerged, fixed-film, packed-bed media bioreactor for low/peak, toxic shock or heavy loading, the maker says, and is ideal for septage receiving stations. **800/753-3278; www.biomicrobics.com.**

Premier Tech Aqua modular decentralized wastewater treatment

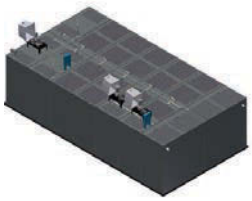
Modular decentralized wastewater treatment solutions from **Premier Tech Aqua** are designed to reduce both wait time for installers and designers and the initial investment required from clients. Integrating both Ecoprocess MBBR and the Ecoflo Coco Biofilter Treatment and Polishing Unit, the off-the-shelf approach offers a variety of treatment options that can be mixed and matched to form a host of treatment combinations. Integrated into rotomolded polyethylene tanks, the product is suitable for both domestic and high-strength wastewater and projects between 1,000 and 20,000 gpd, according to the manufacturer. **800/632-6356; www.premiertechaqua.com.**

COMMERCIAL TREATMENT SYSTEMS

Eliminite Grizzly

The **Grizzly** system from **Eliminite** is designed for large-scale, high-volume, high-strength commercial and industrial applications in locations where reliable advanced treatment, particularly nitrogen reduction, must be achieved with minimal operation and maintenance. Systems can be housed in concrete, polyethylene or fiberglass tanks to ensure the optimal fit and configuration for each site. Systems are ideal for remote/mobile work camps, high-altitude highway rest areas, restaurants, RV parks, ski areas, agricultural facilities, wineries and breweries, churches, schools, convenience stores, and day care facilities, according to the maker. The system is designed to resist clogging and provide adjustable treatment by the operator in challenging commercial applications. **888/406-2289; www.eliminite.com.**

Jet Inc. commercial system



Commercial wastewater treatment plants from **Jet Inc.** are modular in design, are promoted to treat flows up to 300,000 gpd, and allow for phase build-out. This makes it possible for motels, shopping centers and service stations to be constructed along interstate highways far from any town. Subdivisions can be developed miles beyond sewer lines. Factories can be erected in rural areas. Plants treat wastewater through the aerobic digestion process that enables microscopic living organisms to transform wastewater into a clear, odorless liquid. **800/321-6960; www.jetincorp.com.**

CONTROL PANELS

Romtec Utilities control panel repair

Romtec Utilities offers complete repair and retrofit services for electrical control panels. These services include replacing failing or outdated componentry, retrofitting a panel to use newer technologies, updating control panel telemetry, or integrating into a new or existing SCADA system. The service updates existing controllers, implements new standards, complies with safety requirements, or can fix a failing controller. The repair and retrofit includes the training of operation staff and personnel and complete operation and maintenance documentation. The company works with all major brands and component manufacturers. **541/496-9678; www.romtecutilities.com.**

See Water Simple Simplex 3 (SSP-3) Plugger

The **Simple Simplex 3 (SSP-3) Plugger** control panel from **See Water** includes a 120-volt receptacle for quick and easy installation of the pump/pump switch. It includes an 8- by 6- by 4-inch NEMA 4X indoor/outdoor enclosure, red beacon alarm light, 85-decibel buzzer, alarm test and silence buttons. **888/733-9283; www.seewaterinc.com.**

Septronics exterior pump control

Septronics offers an exterior pump control with an interior alarm that comes with a hand-off-auto switch. Operators can turn the power to the pump off and run the pump manually with the toggle switch, or put it on automatic to run via the float switch in the tank. Plug in the pump, plug in the pump switch (single or double float) and wire the automatic reset interior alarm low-voltage line to carry the alarm float information back to the main power supply along with the power line supply for the pump. It's kept safe in a NEMA junction box mounted on the pedestal and includes a hook-up package for the tank. **262/567-9030; www.septronicsinc.com.**

SJE-Rhombus Installer Friendly Series

Installer Friendly Series control panels from **SJE-Rhombus** use circuit board technology for advanced pump control and system monitoring in onsite water and sewage installations. Each panel has a user-friendly touch pad on the inner door for programming and monitoring, including level status, HOA (hand/off/automatic switch), pump run, menu buttons and an LED display. The LED display includes mode, pump elapsed time, events, alarm counter, float error counter, timed-dose override counter and on/off times (time-dosed only). Panels have a NEMA 4X enclosure for indoor/outdoor use with red alarm beacon and alarm horn. They are available for single-phase, three-phase, simplex, duplex, demand-dose, timed-dose, capacitor and event monitoring applications. The panel configuration can be easily converted to demand or timed-dose in the field. They are available for float-based or floatless C-Level sensor operation. They are UL/cUL listed. **888/342-5753; www.sjerhombus.com.**

DISINFECTION

Norweco Bio-Sanitizer

Bio-Sanitizer chlorination tablets from **Norweco** are designed to provide a stable and effective chlorine dose, enabling facilities to consistently meet NPDES bacteria requirements. The tablets kill bacteria present in wastewater rapidly (99 percent are killed in the first 10 minutes after contact). Remaining free calcium hypochlorite dissipates quickly. They are environmentally safe. **800/667-9326; www.norweco.com.**

Salcor 3G UV Wastewater Disinfection Unit

The **3G UV Wastewater Disinfection Unit** from **Salcor** is designed for residential, commercial and municipal uses to 100,000 gpd. It has a foul-resistant two-year Teflon-covered lamp for maximum UV effectiveness, easy installation and annual maintenance. The unit is UL certified NEMA 6P floodproof (30 days submerged) and NSF/Washington State Protocol tested (six months each) with 20 upstream treatment units. The efficient 30-watt, 9,000 gpd gravity-flow unit serves as a reliable building block for larger water recovery/reuse applications, according to the maker. It helps inactivate deadly bacteria and viruses, and has a heavily conformal-coated alarm board, surge protection and EMI (electronic noise) suppression. Existing parallel/series (to 12-unit array) installations, assembled with standard ABS pipefittings, equalize gravity flow without distribution boxes. Electronic circuitry continually monitors lamp performance. Modular unit arrays increase reliability, reduce spare parts inventory and facilitate plant expansions. **760/731-0745.**

Scienco/FAST SciCHLOR

SciCHLOR sodium hypochlorite generators with multi-pass SciCELL Electro-Chemical Activation technology from **Scienco/FAST** produce a strong oxidizing solution designed to kill MRSA and E. coli organisms and other harmful pathogens. Connected to an incoming water source (55 to 85 degrees F) and with operating modes of batch, continuous, clean, setup and diagnostic, the system includes brine and chlorine storage tanks, SciCELL unit recirculation pump and control panel. As chlorine is used, water automatically refills the brine tank. If no solution is used, the system shuts down to save power. The unit produces 10, 20, 40 or 60 pounds of chlorine-equivalent solution per day. The 10-pound unit produces about 150 gallons of solution at 8,000 ppm for treating between 800,000 and 900,000 gpd at 1.5 ppm. **866/652-4539; www.sciencofast.com.**

Waterloo Biofilter Systems EC-P

The **EC-P** from **Waterloo Biofilter Systems** is designed to permanently remove phosphorus from large-scale commercial wastewater installations using electrochemistry. Phosphorus is removed without the use of any chemicals, no sludge production, little energy use and no effect on pH. It precipitates Fe-P minerals onto a filtration medium where they remain highly stable and unavailable to microbes. Units are modular, allowing the system to be easily scaled from 1,000 to more than 50,000 gpd. It can be used for retrofits and new installations, and in conjunction with advanced treatment units or conventional soil-based beds. Greater than 98 percent of phosphorus is removed before entering groundwater supplies, according to the maker. **519/856-0757; www.waterloo-biofilter.com.**

DRAINFIELD MEDIA AND ACCESSORIES

Anua Compact Monafil

The **Compact Monafil** zero-energy biofiltration system from **Anua** uses specialized media to remove odors, VOCs, sulfur and nitrogen-based compounds. The properties of the granular high-density peat media have proven to be a key factor in achieving high-performance removal and extended media life, according to Anua. It also uses recycled shell-based media to maintain a neutral pH within the prepackaged biofilter. The peat and shells ensure optimal odor control while simplifying operation and enhancing system reliability, according to Anua. **800/787-2356; www.anua-us.com.**

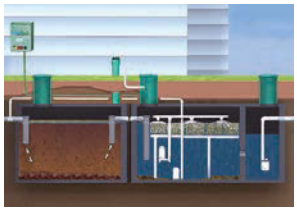
Clarus Environmental recirculating media filter

The recirculating media filter from **Clarus Environmental** is designed for use in decentralized wastewater treatment applications where effluent quality must meet or exceed secondary treatment standards. Treatment occurs below grade as the fluid trickles down through the pore spaces of the media, where aerobic organisms feed on the nutrients. Effluent leaves the system through an outlet pipe in the bottom of the filter. The filter is highly resilient under various incoming waste strengths and is designed for use with any approved and proven media. Multiple media filters can be used together when greater capacities are needed. Effluent can be discharged above or below grade. Above-grade disposal must meet local health codes or guidelines. **800/928-7867; www.clarusenvironmental.com.**

Pagoda Vent Company septic vent

Septic vents from **Pagoda Vent Company** are designed to be lightweight, attractive and ready to attach to a 4-inch-diameter vent stub. The aluminum body will never rust and the eco-friendly exterior powder coat will not fade, according to the maker. They enhance system function with landscape appeal, encouraging healthy subsurface environment by mitigating harmful gases, preserving concrete component integrity by diminishing the opportunity for microbial-induced corrosion, and increasing oxygen levels, promoting aerobic environments. Optional odor filter cartridges are available and fit concealed in the vent. **888/864-1468; www.pagodavent.com.**

SeptiTech STAAR



STAAR filter systems from **SeptiTech** are designed for a simple, automatic and reliable equalization and clarification process to treat high organic loads. The biological trickling filter maintains low levels of nitrate-N with all below-grade components that fit in concrete, plastic or fiberglass tanks. The system is designed to recognize peak, low, intermittent or no-flow conditions, allowing it to go into a sleep mode that dials down activity and eventually shuts all power off until normal flow conditions are detected. It treats 100 to more than 150,000 gpd. **800/318-7967; www.septitech.com.**

Sim/Tech Filter orifice shields

Orifice shields from **Sim/Tech Filter** are designed to prevent drain media, such as stone, from blocking discharge holes so pressurized systems distribute effluent evenly. The shields are designed to firmly snap into place on laterals. The large amount of open area between the pipe and the shield allows for easy placement over the holes and reduces media clogging by debris. Two styles are available for top discharge distribution holes and bottom discharge holes. Shields are available to fit 3/4-, 1-, 1 1/4-, 1 1/2-, 2- or 3-inch pipe. **888/999-3290; www.simtechfilter.com.**

The Dirty Bird septic pipe cover

The Dirty Bird septic pipe cover uses a charcoal filter to fight odors. It is available in three colors and fits into the landscape disguised as a pedestal birdbath. It can used to conceal pipes from residential AIRVAC 4-inch vents. The three-step installation requires cutting a 4-inch vent at 22 inches above the ground and placing the unit over the vent pipe. A stainless steel screen is installed to accommodate the flow requirements of the AIRVAC system. **866/968-9668; www.thedirtybird.com.**

LARGE-CAPACITY HOLDING AND TREATMENT TANKS

Containment Solutions Flowtite

Flowtite underground fiberglass tanks from **Containment Solutions** satisfy multiple credits of the LEED green building rating system. They can be used for rainwater harvesting, landscape irrigation, graywater reuse, and stormwater collection and treatment. They are designed to meet AWWA D120, FPA 22, NSF 61 and IAPMO standards for water/wastewater storage. Sizes range from 600 to 60,000 gallons. They are lightweight and watertight, noncorrosive, include fiberglass access collars in 24-, 30-, 36- and 48-inch options, have a watertight fiberglass riser, deadmen anchors, fiberglass anchor straps and a fiberglass baffle. Accessories include PVC inlet piping and an effluent pump with filter. **877/274-8265; www.containmentsolutions.com.**

Norwesco 3525

The **3525** belowground holding tank from **Norwesco** provides a large-capacity solution for fire suppression, rainwater harvesting, potable water and sewage holding. It has molded-in tie down and lifting lugs on the corners for ease of handling. Its multiple fitting flats provide maximum flexibility for plumbing during installation. The tank is designed with molded-in support columns for structural support and strength when backfilled. **800/328-3420; www.norwesco.com.**

Roth Global Plastics MultiTank

The **MultiTank** from **Roth Global Plastics** can be used in water cistern, pump, holding, rainwater or septic tank applications. It has an inner layer of FDA-approved virgin HDPE, two inside layers of polyethylene for improved stability, and one outer layer of black and UV-stabilized polyethylene. Features include CSA, NSF and IAPMO certification, a COEX-4 multilayer co-extrusion process, a low-profile design that means less digging and avoidance of a high-water table, lightweight construction, a multi-port inlet/outlet convenient for field piping, the ability to enter and exit the tank on the ends or sides, two 24-inch manways to provide easy access for maintenance and service, a threaded riser system and watertight seamless construction. **866/943-7256; www.rothmultitank.com.**

LEVEL ALARMS

Septic Products Observer 400

The **Observer 400** indoor/outdoor high-water alarm from **Septic Products** includes a NEMA 4X polycarbonate, durable, weather-resistant enclosure, 360-degree red alarm light, alarm horn and an alarm test-normal-silence toggle switch and automatic alarm reset. It comes with an internal terminal block to connect incoming power, pump, pump float, alarm float and auxiliary contacts. A

6-foot 120 VAC power cord is optional. A mechanical float with a 15-foot cord and tie strap is standard, with other cord lengths and mercury floats available. It is UL listed. **419/282-5933; www.septicproducts.com.**

Septic Services LB50

The **LB50** indoor/outdoor alarm from **Septic Services** is designed for high-water detection for use in industrial and commercial systems. It has a warning light and audible alarm along with an easily accessible three-position switch to change the alarm among normal operation mode, alarm silence mode and alarm testing mode. It is fused to protect the internal electrical circuitry against power surges and spikes. The impact-resistant polycarbonate housing is designed to further protect the circuitry from corrosion. It comes with a 9-foot 6-inch float, making it compatible with commercial and residential sewage systems, dosing chambers, lift stations, cisterns and other water and sewage systems that require high-water detection to prevent equipment damage or failure. It is easy to install by connecting the level control switch to terminal blocks and plugging the 7-foot power cord into a 115-volt outlet. **800/536-5564; www.septicserv.com/store.**

PUMP STATIONS

Gorman-Rupp ReliaSource

The **ReliaSource** 8 x 9 above-ground lift station from **Gorman-Rupp** offers a smaller footprint than previous models. It includes Gorman-Rupp pumps, controls and enclosures, and is fully assembled and rigorously tested to operating conditions in state-of-the-art facilities, according to the manufacturer. **419/755-1011; www.grpumps.com.**

Polylok PL-PS40

The **PL-PS40** prepackaged basin assembly from **Polylok** comes ready to assemble. It is made of high-density polyethylene and is lightweight and compact. To install, glue three pieces of PVC and connect the inlet and outlet pipes, and provide power. The design allows for the addition of a Polylok adapter ring to add up to 24 inches of Polylok risers to reach the desired height. The prepackaged basin assembly is easy to access and easy to disconnect for future servicing, according to the maker. The installation kit includes a 24- by 40-inch basin, 24-inch heavy-duty cover, .4 hp effluent pump with a piggyback float for automatic on/off operation, indoor/outdoor audible and visual alarm with float, internal piping system (2-inch PVC piping and a gate, check and union all in one valve assembly), three grommets, one 4-inch inlet, one 2-inch discharge and one 1 1/2-inch for electrical, and a junction box with three watertight connectors. **877/765-9565; www.polylok.com.**

PUMPS/PUMP COMPONENTS

Ashland Pump EP50

The **EP50** effluent pump from **Ashland Pump** has a continuous-duty rated, energy-efficient 1/2 hp PSC motor with performances reaching 105 gpm and 53 feet of head pressure. It is constructed of heavy-duty cast iron with a cast iron impeller capable of passing 3/4-inch solids. It is available in 115-volt, with a wide-angle piggyback switch and also in 230-volt manual versions. **855/281-6830; www.ashlandpump.com.**

Charles Austen Pumps Envir-o

The **Envir-o** from **Charles Austen Pumps** provides aeration in packaged sewage treatment plants. The simple, efficient pumping principle uses an electromagnetically operated diaphragm, eliminating sliding parts and keeping wear and tear minimal. It incorporates energy-efficient motors for low power consumption. The design has a compact alloy casing that is weatherproof and does not degrade over time. It is available in steps from 30 l/min to 200 l/min. The range is CE and UL approved. A built-in alarm system detects low pressure in the airline, alerting users via a loud buzzer and LED warning light. **770/831-1122; www.bluediamondpumps.com.**

E-Z Out slide rail system

The lift-out slide rail system from **E-Z Out Manufacturing** is designed for most vertical discharge-type submersible pumps under 5 hp, with 1 1/4-, 2- and 3-inch NPT discharge nozzles or 2 1/2- or 3-inch horizontal discharge. It provides easy above-ground service access for most submersible sewage, sump and grinder pumps from wet pit applications. The system can prevent the need or risk of a confined-space entry to service pumps. Pumps are removed from above the sump for inspection and service. **604/942-7994; www.engineeredpump.com.**

Franklin Electric Inline 400

The **Inline 400 Pressure Boosting System** from **Franklin Electric** couples a pump and motor with simple flow-based controls to provide a typical water pressure boost of up to 40 psi, depending on the application's need. The unit's symmetrical design allows for easy installation mounting either vertically or horizontally to fit within most existing plumbing configurations – including those where space is limited. This system provides city water pressure boosting, pressurizing water from a cistern tank, re-pressurizing after filtration, and irrigation system boosting applications. Available in 115- and 230-volt models, it has a product rating of 1/3 hp, a 1-inch NPT inlet and outlet, and is powered via a standard electrical cord. Integrated pump protection guards against over/under voltage, dry run and over temperature. Electronics in the unit include two pressure switches that monitor and reduce the chance of over-pressuring the system. A flow switch ensures it only runs when needed. **800/701-7894; www.franklinwater.com.**

Goulds Water Technology e-HM

The **e-HM** series of multistage pumps from **Goulds Water Technology - a xylem brand**, has a horizontal orientation, comes in six models for modular construction, and is available for use in applications such as industrial washing, water treatment and pressure boosting. Configuration flexibility paired with a small motor makes it energy-efficient. The standard balanced impeller leads to a 40 percent reduction in axial thrust, and the 20 percent increase in body thickness leads to a higher working pressure and reaches a flow rate of 27 gpm. A broad hydraulic range and multiple space-saving configurations reduce carbon dioxide emissions while increasing performance. **866/325-4210; www.goulds.com.**

Hydra-Tech Pumps S3T

The **S3T** 3-inch hydraulic-drive submersible trash pump from **Hydra-Tech Pumps** fits into 12-inch openings and is used where lightweight, high-volume trash pumps are needed. A small-hole water strainer is available for jobs with limited solids. Combined with HT11 to HT15 power units, the pump is capable of flows up to 380 gpm. The safe and variable-speed hydraulic drive can be used where electric power is hazardous or impractical. **570/645-3779; www.hydra-tech.com.**

Liberty Pumps LSG-Series Omnivore

LSG-Series Omnivore grinder pumps from **Liberty Pumps** have V-Slice Cutter Technology that provides shredding performance in demanding sewage applications, according to the manufacturer. The hardened stainless steel cutting system shreds jeans, shop rags, diapers, sanitary napkins and other difficult solids into fine slurry with infrequent jamming. Models are available in single- or two-stage designs, providing maximum pumping heads to 180 feet. Complete predesigned grinder systems are available in a variety of basin sizes. **800/543-2550; www.libertypumps.com.**

Weber Industries WEBTROL Pumps MVPS-RE1

The **WEBTROL Pumps MVPS-RE1** drop-in package for existing progressive cavity systems from **Weber Industries** provides reliable operation and nearly constant flow, easily able to adjust for pressure variations in any system setting, according to the manufacturer. It is powered by a 1 1/2 hp, 1,750 rpm motor that provides grinding torque. All package parts are readily available and easily replaceable. **800/769-7867; www.webtrol.com.**

Want More Stories?

Get more news, information, and features with our exclusive online content.

Check out

Online Exclusives

at

www.onsiteinstaller.com/online_exclusives

ONSITE installer

All New!! digDIFFERENT magazine

Exclusively serving contractors involved in alternative excavation that goes beyond buckets and blades

www.digdifferent.com

Pump Control And Alarm Products Meet A Variety Of Demands

MASTER CONTROLS

From high water alarm systems to timed-dose control panels, Clarus Environmental has solutions projects need. Our **high-water alarm box** remains water tight under the worst conditions. Our **timed-dose panel** provides a reliable means of controlling single phase pumps in onsite applications.

YOUR PEACE OF MIND IS OUR TOP PRIORITY.®

CLARUS® ENVIRONMENTAL

1-800-928-7867
www.clarusenvironmental.com

ALITA®

c UL us
UL certified in compliance to USA and Canada safety standards for outdoor air compressors

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 660923, Arcadia, CA 91066-0923, USA
phone: (626) 962-2116 fax: (626) 962-2177
on-line: www.alita.com e-mail: sales@alita.com

WHO CARES ABOUT A COST EFFECTIVE SYSTEM?

Answer - everyone! Stop digging trenches and using expensive equipment. Drip dispersal is faster, easier and less costly to install. Stop disposing, start dispersing.

BIOLINE® DRIP DISPERSAL

www.netafimusa.com/wastewater

NETAFIM™

Large Scale and Commercial Treatment Systems

By Craig Mandli

Low-pressure distribution system replaces failing septic

Problem: In 2009, Prospect Mountain Campground in Granville, Massachusetts, wanted to expand and repair its existing conventional septic system. The original system was broken into four separate fields with two zones failing and the other two located within 100 feet of public water wells. There was limited space for a new system to handle the 10,000 gpd design flow and meet the mandatory advanced treatment requirements.

Solution: A low-pressure distribution **Eljen GSF Treatment System** was chosen for the job. It treats wastewater to NSF Standard 40 requirements and needs little to no maintenance. The 10,000 gpd system was separated into three zones alternately dosed throughout the day. The system was designed by T. Reynolds Engineering of Whately, Massachusetts, and installed by Geeleher Enterprises of Southampton, Massachusetts.

Result: The system allowed the campground to expand and replace the existing failing system, while fitting into the limited space available. The system was installed in 2010, allowing the campground to provide its customers expanded services and features. **800/444-1359; www.eljen.com.**

Community solves overflow challenges with chamber drainfield

Problem: Wastewater produced by Gold Beach, Oregon's 2,250 residents is treated by a sequencing batch reactor plant, disinfected with UV disinfection and then discharged to a series of subsurface drainfields located at the nearby airport. The existing drainfields didn't have the capacity for peak wet weather flows and were experiencing effluent surfacing along with overflows discharged to a creek. The Port of Gold Beach, which leases the property to the city, was concerned about construction of additional drainfields and requested that drainfield operations be confined to the limited, existing easement.

Solution: The new treatment plant and chamber drainfield system from **Infiltrator Water Technologies**, designed by The Dyer Partnership Engineers, is based on the maximum allowable area within the existing easement and is strategically placed adjacent to an airport runway. It is designated as a runway safety area (RSA), which is defined as an area "prepared or suitable for reducing the risk of damage to airplanes in the event of an excursion from the runway." As the RSA must be clear of obstacles and capable of supporting the occasional aircraft, the 2 mgd chamber drainfield design was modified to include stone. This increased the structural capacity in case of an airport emergency condition. The system is covered with a geotextile to prevent sand intrusion into the stone.

Result: The innovative design has 21 drainfields rather than the original nine, and offers flexibility and redundancy to the city. **800/221-4436; www.infiltratorwater.com.**

Pump station maximizes holding capacity for hotel and restaurant expansion

Problem: The Spooky Nook Sports Complex in Manheim, Pennsylvania, underwent a hotel and restaurant expansion, adding a new 130-room Warehouse Hotel and 260-seat restaurant to support the complex. The facility needed a submersible wastewater pump station to handle the additional wastewater capacity required. It needed to fit within a small area of land located adjacent to the hotel portion of the complex.

Solution: **Oldcastle Precast** provided a **OneLift RC611** pump station, with a 25-foot depth and storage capacity of 468 gallons per vertical foot, to accommodate the expansion requirements. The station is designed with an integral valve vault built into the unused top portion of the wet well, solving differential settlement issues. The preassembled single-structure design reduces the product footprint for sites with tight area restrictions. The manufacturing schedule was also a benefit to Ashlin Woods, the general contractor. The standard design and stock castings allowed the pump station to be delivered six weeks after release for production.

Result: The station was installed in March 2015 and has operated flawlessly. "The total setup took about two hours," says Matt Dobroskey of Mid Atlantic Pump & Equipment Company. **888/965-3227; www.oldcastleprecast.com.**

(continued)

"Duel Power Lid"

Plugs, Lids & Adaptor Rings

Sizes Available: 18", 24", 30" & 36"

Fergus Power Products
Providing "Environmental Products"

The Company who maintains a pulse on the environment!

Toll Free 1-800-243-7584
E-mail fpproducts@prtel.com
www.FergusPowerProducts.com

Featured In An Article?

We provide reprint options

Sizes: 24" x 30" & 36" x 45"

POSTERS Starting At **$35**

LASER REPRINTS Starting At **$10**

ELECTRONIC REPRINTS Starting At **$25**

Order Reprints

Order through our website
www.onsiteinstaller.com

BUILD STRONG - BUILD SAFE

WITH PRECAST TANKS TO 40,000 GALLONS

- Septic, Grease Interceptors, Aeration, Holding Tanks
- Available in Sizes 750 to 40,000 Gallon
- Extra Heavy Duty Tanks — HS20 Loading
- Fast, Efficient Settings

Visit us on the Web: www.wieserconcrete.com

- Vacuum-Tested, Water Tight Structures
- Tanks for Bio-Microbics and Nibblers, Sand Filters
- Custom Sizes Available to Fit Your Needs
- National Delivery and Setting

WIESER CONCRETE *Innovation, Quality and Service since 1965*

NPCA CERTIFIED PLANT

1-800-325-8456

Junction Boxes, Alarms, Pedestals, & Pump Controls

Septronics® Inc.

2015 Make it Your Record Year SeptronicsWill Help

- Exterior Pump Controls w/Exterior Alarms
  — *Pedestal Mount or Wall Mounted*
- Exterior Pump Controls w/Interior Alarms
  — *Pedestal Mount or Wall Mounted*
- Controls w/ Event Counters & Circuit Breakers
- Exterior & Interior Alarms
  — *Single, Dual, or Auxiliary Options*
- Mechanical Float Switches
  — *Heavy or Standard Duty, Filter, Vertical, Hi Temp*

www.septronicsinc.com
Ph: 262.567.9030 • Email: susan@septronicsinc.com

Effluent sewer with AdvanTex replaces failing onsite systems

Problem: Public concern was mounting over the lack of adequate wastewater treatment for homes in Fulton, Alabama. High groundwater levels contributed to septic system failures at some residences, while others had no septic system at all. In addition to mounting environmental concerns, affordability was a major obstacle.

Solution: Mayor Mike Norris researched alternatives that could provide cost-effective treatment with subsurface discharge and meet permit limits of 30 mg/L BOD5/TSS and 20 mg/L TKN. He chose an effluent sewer followed by **AdvanTex** treatment systems from **Orenco Systems**. This combination produced high-quality effluent with low maintenance and energy consumption. Phase I, consisting of 65 on-lot STEP packages with service lines connecting to nine **AX-100** units, was completed in 2006. Norris then pursued additional funding and, in 2013, Phase II included 132 additional STEP connections and five **AX-Max** units – premanufactured secondary treatment facilities that integrate the recirculation tank with the media, reducing installation time.

Result: Effluent quality averages 7 mg/L BOD5 and 3 TSS, with 6 mg/L TKN, and residents pay monthly rates of $37.50. "The system is doing what it's supposed to do, our property owners are satisfied and the city council is tickled to death," says Norris. **800/348-9843; www.orenco.com.**

Cluster system provides passive community treatment with denitrification

Problem: The Town of Newbury, New Hampshire, had a problem with the existing 50,000 gpd sand filter system. Parts of the system routinely froze during winter months, inhibiting the nitrification and denitrification process. The facility had an antiquated 34,000-gallon Imhoff tank that required replacement, and the system was not large enough to handle the growing community.

Solution: Engineers at Stantec consulted with the town to use the passive wastewater treatment system from **Presby Environmental** to meet strict treatment levels with a small budget. The Blodgett Landing Treatment Plant was designed as a recirculating system with the multi-level configuration handling flows ranging from 2,500 to 88,000 gpd. The wastewater goes through an initial screening, then to one of two Imhoff tanks where sedimentation and separation occurs. The effluent then flows to an equalization tank before it is dispersed to one of the four 90- by 50-foot passive Enviro-Septic treatment beds. The beds consist of 48 rows of pipe that are each 86 feet long. At 50,000 gpd, the 16,400 feet of pipe treats roughly 3 gallons per linear foot per day.

Result: The town has been able to exceed treatment standards while keeping overall costs down. Current treatment levels include TSS of 4.73 mg/L, BOD of 5 mg/L, TN of 3.6 mg/L, TKN equal or less than 0.82 mg/L, and fecal coliform of 44.9 MPN/100 ML. **800/473-5298; www.presbyeco.com.**

MBBR system retrofitted at a highway rest stop

Problem: A wastewater treatment system failed, causing persistent odor issues and inability to meet effluent requirements. This prompted the owners of Seguin Trails Rest Stop, a highway commercial plaza with a Tim Hortons doughnut shop, Dairy Queen and Lick's Burger near Parry Sound, Ontario, Canada, to explore options for an upgraded wastewater system.

Solution: **RH2O North America**, working with Van Harten Surveying, recommended a 15,850 gpd **WSB clean pro** MBBR system. Repurposing the original tanks and using the existing leaching bed area enabled the property owner to save over $1 million on the cost of the upgrade. The system employs a plastic carrier media that doesn't need to be cleaned or replaced to support biofilm growth. Click+Clean control panels with cellular remote monitoring alerts the service technicians of problems with mechanical components immediately and minimizes onsite service.

Result: Into the third year of operation, the leaching bed is functioning well and the system is meeting the effluent objectives of CBOD5 of less than 10 mg/L, TSS less than 10 mg/L and total phosphorus less than 0.5 mg/L. Phosphorus reduction is achieved using PAC dosing prior to the final clarifier. **519/648-3475; www.rh2o.com.**

I'm proud of my industry.

I belong to an elite group of business people who keep homes and communities safe, clean and healthy. My colleagues and competitors are true professionals who care about their work and about customers' welfare. Members of this industry are some of my greatest role models and best friends.

I work with the greatest people in the world.

Lead the way

For your customers,
your industry,
and your business

ONSITE installer™ classifieds

Place your ad online at: www.onsiteinstaller.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.septicserv.com. 1-800-536-5564 (IM)

BUSINESSES

Septic Tank Service Business for Sale, Northeast Florida. Owner wishes to retire. Callahan area north of Jacksonville, a fast-growing area in Florida. Profitable, turnkey business. 29 years in business with loyal customer base. Two pump tuck operation: (1) 1996 International 4900: DT466, 5-speed transmission, 2-speed axle. 2,500-gallon capacity. 297,000 miles. Good tires, excellent condition. (2) 2000 Freightliner FL70: 8.3 Cummins, 6-speed transmission. 2,400-gallon capacity. 195,000 miles. Good tires, excellent condition. Business includes complete onsite lime 20,000-gallon stabilization plant in Northeast FL. Owner will train and assist with licensing. Call for more information. Kenny Farmer 904-879-4701 or 904-545-0357. (P08)

Fully-equipped Long Island, NY cesspool cleaning company for sale. Established 50+ years serving Nassau & Suffolk Counties with excellent reputation and high-repeat customer base. 516-993-0446 (I08)

HAND TOOLS

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

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, 1-800-536-5564 (IM)

Retired - Powerful Demag-Wittig vacuum pump for sale. Makes 1,041 cfm. Tractor-mount only (too powerful for bobtail trucks). Comes with all mounting hardware. Can ship. $3,500. Call Jimmy for photos and details 949-701-2687. (P08)

SOLD

Sell your equipment in
Onsite Installer classifieds

Reach over 21,000 potential buyers each month when you list your equipment in the classified section. Plus, your listing is placed automatically online at the *Onsite Installer* website. That's two ways to move your equipment out of the yard!

Why wait?

Go to
onsiteinstaller.com/classifieds/place_ad

Scan the code with your smartphone.

productnews

RIDGID transportable pipe beveller

The B-500 transportable pipe beveller from RIDGID produces a consistent, high-quality bevel in less than two minutes without flames or sparks, replacing traditional beveling such as grinding. The unit mounts to the end of pipes 4 inches or greater in diameter with a maximum wall thickness of a 1/2-inch, as well as flat plates up to 1/2-inch thick. Interchangeable heads allow bevels to be cut at 30 degrees, 37.5 degrees or 45 degrees. Features include speed monitoring with LED indicators that assist the operator in keeping the beveller moving at an optimal pace. **800/769-7743; www.ridgid.com.**

Water Cannon hot-water pressure washer

The hot-water diesel pressure washer skid package from Water Cannon features a General or Annovi Reverberi pump that delivers up to 8 gpm and 4,000 psi. Powered by a Kubota Z602B1 or DH902B1 engine, the roll-cage-protected pressure washer is designed to destroy stubborn contaminants in commercial settings. It has a 12 VDC diesel-fired Beckett burner that delivers 118-degree F water temperature (210 maximum), 15-gallon fuel tank, 40-amp charging system and battery box. **800/333-9274; www.watercannon.com.**

Komatsu hydraulic excavator

The PC78US-10 hydraulic excavator from Komatsu America Corp. has a 55 hp Tier 4 Final engine that doesn't require a diesel particulate filter (DPF) or diesel exhaust fluid (DEF). The excavator features a tight tail-swing radius for confined spaces, offset boom and contoured cab design. **847/437-5800; www.komatsuamerica.com.**

Crescent self-adjusting pipe wrench

The CPW12 12-inch, self-adjusting pipe wrench from Crescent, a member of the Apex Tool Group, is designed for one-handed performance in a variety of jobs. The wrench works on most common pipe, from 5/8 to 1 1/2 inches, including black iron, galvanized, PVC and copper. A black oxide finish resists corrosion. **919/362-1670; www.crescenttool.com.**

WHAT'S TRENDING FOR ONSITE SYSTEMS?

FIND OUT AT ONSITEINSTALLER.COM

ALSO:
- FREE Subscriptions
- Online Exclusives
- Email Alerts
- E-Newsletters
- Blogs and Videos
- Manufacturers/Dealers

industrynews

Infiltrator Systems sold, changes name

Infiltrator Systems was sold to the Ontario Teachers' Pension Plan and renamed Infiltrator Water Technologies LLC. Graham Partners, a private equity firm, had owned Infiltrator Systems since 2005. Based in Old Saybrook, Connecticut, Infiltrator manufactures products for decentralized wastewater systems and provides technologies for the septic and stormwater retention/detention industries. Headquartered in Toronto, the Ontario Teachers' Pension Plan manages $154.5 billion in net assets.

CULTEC adds downloads, product details to website

CULTEC redesigned its website, www.cultec.com, providing downloads and project and product images on a wider screen format. The company also updated its *Stormwater Management Design Guide*, available under the Design Assistance tab.

Manitou Americas celebrates 50 years of Mustang loaders

Manitou Americas celebrates 50 years of Mustang skid-steer loaders this year. In 1965, Owatonna Manufacturing Co., today part of Manitou Americas, began designing and manufacturing its own line of skid-steer loaders, starting with the Owatonna Mustang Series 1000.

Wieser Concrete celebrates 50th anniversary

Wieser Concrete celebrated its 50th anniversary in April at its Maiden Rock, Wisconsin, location. Beginning as a one-man crew with a hand-mixer in 1965, Wieser today employs 160 workers.

GPS Insight founder finalist for EY Entrepreneur of the Year

Rob Donat, founder and CEO of GPS Insight, is a finalist for the 2015 EY (Ernst & Young) Entrepreneur of the Year award in the Mountain Desert region. The award recognizes individuals who demonstrate excellence and success in innovation, financial performance and personal commitment to their businesses and communities.

Roth MULTITANK
Septic Tanks • Water Cisterns
Pump Tanks • Holding Tanks
Rain Water Harvesting

Multi Usage Multi Layer Multi Coverage

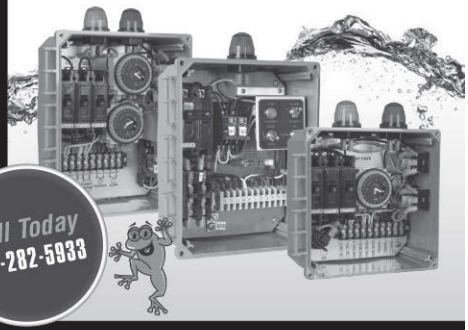
- Inner layer of FDA approved virgin HDPE, two inside layers of PE for improved stability, plus one outer layer of black and UV-stabilized PE
- Lifetime* corrosion protection and 5 years of labor insurance
- Strongest & heaviest poly tank on the market
- No water for backfilling required
- Low profile
- 100% watertight

Our multi-layered tank construction, consisting of virgin material surrounded by 3 layers of protection.

NSF UPC

BEST TANK. BEST WARRANTY. BEST SYSTEM.
Roth Global Plastics
www.roth-america.com 866-943-7256
*see warranty for details

SPI
SEPTIC PRODUCTS INC
The Most Complete Line of
SYSTEM ALARMS
FLOAT SWITCHES
ON-SITE ACCESSORIES
CONTROL PANELS
Call Today
419-282-5933



sales@SepticProducts.com SepticProducts.com

Socially Accepted
facebook.com/OnsiteInstaller
twitter.com/OnsiteInstaller
plus.google.com
youtube.com/OnsiteInstaller

If you would like your wastewater trade association added to this list, send contact information to editor@onsiteinstaller.com.

Serving the Industry

Visit your state and provincial trade associations

Alabama
Alabama Onsite Wastewater Association; www.aowainfo.org; 334/396-3434

Arizona
Arizona Onsite Wastewater Recycling Association; www.azowra.org; 928/443-0333

Arkansas
Arkansas Onsite Wastewater Association; www.arkowa.com

California
California Onsite Wastewater Association; www.cowa.org; 530/513-6658

Colorado
Colorado Professionals in Onsite Wastewater; www.cpow.net; 720/626-8989

Connecticut
Connecticut Onsite Wastewater Recycling Association; www.cowra-online.org; 860/267-1057

Delaware
Delaware On-Site Wastewater Recycling Association; www.dowra.org

Florida
Florida Onsite Wastewater Association; www.fowaonsite.com; 321/363-1590

Georgia
Georgia Onsite Wastewater Association; www.onsitewastewater.org; 678/646-0379

Georgia F.O.G. Alliance; www.georgiafog.com

Idaho
Onsite Wastewater Association of Idaho; www.owaidaho.org; 208/664-2133

Illinois
Onsite Wastewater Professionals of Illinois; www.owpi.net

Indiana
Indiana Onsite Waste Water Professionals Association; www.iowpa.org; 317/889-2382

Iowa
Iowa Onsite Waste Water Association; www.iowwa.com; 515/225-1051

Kansas
Kansas Small Flows Association; www.ksfa.org; 913/594-1472

Kentucky
Kentucky Onsite Wastewater Association; www.kentuckyonsite.org; 855/818-5692

Maine
Maine Association of Site Evaluators; www.mainese.com

Maine Association of Professional Soil Scientists; www.mapss.org

Maryland
Maryland Onsite Wastewater Professionals Association; www.mowpa.org; 443/570-2029

Massachusetts
Massachusetts Association of Onsite Wastewater Professionals; www.maowp.org; 781/939-5710

Michigan
Michigan Onsite Wastewater Recycling Association; www.mowra.org

Michigan Septic Tank Association; www.msta.biz; 989/808-8648

Minnesota
Minnesota Onsite Wastewater Association; www.mowa-mn.com; 888/810-4178

Missouri
Missouri Smallflows Organization; www.mosmallflows.org; 417/739-4100

Nebraska
Nebraska On-site Waste Water Association; www.nowwa.org; 402/476-0162

New Hampshire
New Hampshire Association of Septage Haulers; www.nhash.com; 603/831-8670

Granite State Designers and Installers Association; www.gsdia.org; 603/228-1231

New Mexico
Professional Onsite Wastewater Reuse Association of New Mexico; www.powranm.org; 505/989-7676

New York
Long Island Liquid Waste Association, Inc.; www.lilwa.org; 631/585-0448

North Carolina
North Carolina Septic Tank Association; www.ncsta.net; 336/416-3564

North Carolina Portable Toilet Group; www.ncportabletoiletgroup.org; 252/249-1097

North Carolina Pumper Group; www.ncpumpergroup.org; 252/249-1097

Ohio
Ohio Onsite Wastewater Association; www.ohioonsite.org; 866/843-4429

Oregon
Oregon Onsite Wastewater Association; www.o2wa.org; 541/389-6692

Pennsylvania
Pennsylvania Association of Sewage Enforcement Officers; www.pa-seo.org; 717/761-8648

Pennsylvania Onsite Wastewater Recycling Association;
www.powra.org

Pennsylvania Septage Management Association;
www.psma.net; 717/763-7762

Tennessee

Tennessee Onsite Wastewater Association;
www.tnonsite.org

Texas

Texas On-Site Wastewater Association;
www.txowa.org; 888/398-7188

Virginia

Virginia Onsite Wastewater Recycling Association;
www.vowra.org; 540/377-9830

Washington

Washington On-Site Sewage Association;
www.wossa.org; 253/770-6594

Wisconsin

Wisconsin Onsite Water Recycling Association;
www.wowra.com; 608/441-1436

Wisconsin Liquid Waste Carriers Association;
www.wlwca.com; 608/441-1436

NATIONAL

Water Environment Federation;
www.wef.org; 800/666-0206

National Onsite Wastewater Recycling Association;
www.nowra.org; 800/966-2942

National Association of Wastewater Technicians;
www.nawt.org; 800/236-6298

CANADA

Alberta

Alberta Onsite Wastewater Management Association;
www.aowma.com; 877/489-7471

British Columbia

British Columbia Onsite Wastewater Association;
www.bcossa.org; 778/432-2120

WCOWMA Onsite Wastewater Management of B.C.;
www.wcowma-bc.com;
877/489-7471

Manitoba

Manitoba Onsite Wastewater Management Association;
www.mowma.org; 877/489-7471

Onsite Wastewater Systems Installers of Manitoba, Inc.;
www.owsim.com; 204/771-0455

New Brunswick

New Brunswick Association of Onsite Wastewater Professionals;
www.nbaowp.ca; 506/455-5477

Nova Scotia

Waste Water Nova Scotia;
www.wwns.ca; 902/246-2131

Ontario

Ontario Onsite Wastewater Association;
www.oowa.org; 855/905-6692

Ontario Association of Sewage Industry Services;
www.oasisontario.on.ca;
877/202-0082

Saskatchewan

Saskatchewan Onsite Wastewater Management Association;
www.sowma.ca; 877/489-7471

Canadian Regional

Western Canada Onsite Wastewater Management Association;
www.wcowma.com;
877/489-7471

Wolverine Brand
Septic Vent Filters
We Stop the Stink!

Patent #US 8,273,162

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

IndustrialOdorControl.com
866-NO-STINK (667-8465)
973-846-7817

Simple Solutions DISTRIBUTING LLC

SIM/TECH FILTER
Toll Free 888-999-3290

STF-100 series pressure filter

» Lower total suspended solids (TSS)
» Protect with low head-loss (.5002 ft)
» Extend the life of the distribution field
» Filter to .062", .024", .007", or .004"
» Pass up to 83.8 gallons per minute @ 1PSI
» Allow for easy installation and service
» Protect from improper system maintenance
» Protect from system abuse
» Satisfy your customers

US Patent# 5,885,452
CAN Patent# 2,237,751

www.simtechfilter.com

Breakthrough Blower Technology!

Lower operating temperature extends life of wearable parts. Best-in-class power efficiency. Highest quality product and warranty at highly competitive wholesale pricing.

844-468-1344 (toll free)
www.macblowers.com
MACBlowers
by FujiClean of Japan

Truck For Sale:
2004 FL70 Freightliner,
Cat Diesel Eng,
6 speed, A/B, A/C,
new 16' set bed,
$34,000
For Photo contact Tommy

Custom Made To Your Specs Truck Beds & Forms

1500 & 1000 Gal.
2 Compt.
Septic Tank Forms

Septic Tank Delivery Beds

Call Tommy for a quote!
THE SHADDIX COMPANY
256-338-4987 or
256-737-0051
Ask about our used equipment

HONDA 4200 PSI PRESSURE WASHER

$1,099 Delivered

Financing Available
Water Cannon,
Un contacto en Espanol:
llama al: 1.800.333.9274
WATER CANNON .com

Invented and Made in the USA
THE DIRTY BIRD™
Septic Vent Concealer

Installs in 3 Easy Steps!

Converts your ugly septic vent into an attractive pedestal/bird bath and controls odor too!

866.968.9668 781.806.0797
Reps & Distributors Wanted www.thedirtybird.com

PL-250 6” Effluent Filter

POLYLOK™ Inc. BEST TECHNOLOGY ZABEL environmental technologies

The industry leader in effluent filter technology is pleased to introduce our latest effluent filter offering. The new PL-250 6” Effluent Filter is now available. This filter was designed using our more than 90 years of combined effluent filter experience. Our 6” filter offers greater surface area to handle more gallons per day while also extending the time between tank cleanings. The Pl-250 offers 250 linear feet of filtration. Like our other filters, installation is easy!

Polylok, Inc. is recognized as the industry leader in effluent filter technology. With our proven track record, you can’t go wrong. We offer three unique filter lines: Polylok, Zabel and Best. All of our filters are designed with functionality and longevity in mind. The PL-250 incorporates nearly a century of experience in its design.

FEATURES & BENEFITS

• Accepts 1” PVC handle • 250 linear feet of filtration • 6” diameter • Rated for 3,000 GPD
• 550 SQ.IN. of total surface area • “W” design prevents solids from settling • Can not be installed incorrectly


Polylok PL-68


Polylok PL-122


Polylok PL-525


Polylok PL-625


Zabel A1800


Zabel 8 Series A100/300/600


Zabel 12 Series A100/300/600


Best GF-10

1-800-701-3946 / www.polylok.com