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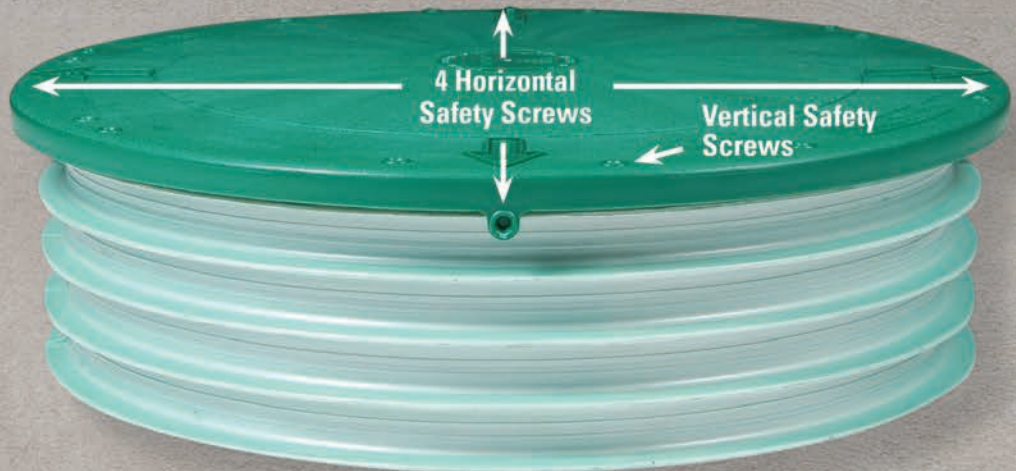


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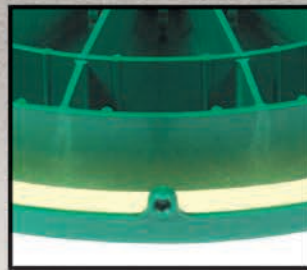
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### INSTALLER PROFILE: A Natural Transition

By Ted J. Rulseh

#### ON THE COVER:

Massachusetts-based excavation firm Rotti and Son gravitated to an onsite specialty and has never looked back. Father and son team Tim and Luke Rotti are shown with a Mack RD690 tandem with a J&J dump body. (Photo by Scott Eisen)

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**Jim Kneiszel**



Send your comments, questions or opinions to Jim Kneiszel at editor@onsiteinstaller.com

# 78 and Counting

"Alligator Annie" Alma Tippins hopes someone will show up to buy her installing business. Until then, she'll keep bossing around her crew.

Every once in a while I get a reminder about a big challenge to the onsite industry — the aging of our workforce. It happened again recently when the phone rang and Alligator Annie was on the other end of the line, talking a blue streak about big plans to sell her business installing mostly aerobic systems across East Texas.

I recalled how Annie — her real name is Alma Tippins — had been profiled in the April 2006 issue of *Onsite Installer*. And those 17 years ago, when she was age 62, she was already talking about selling Alligator Annie's in Nacogdoches, Texas. Turning 78 this month, Alma is still waiting for a buyer to show up at her doorstep and take over.

"Alma," I said, "how do you keep on doing it? Why haven't you been able to retire?"

Her initial answer was fascinating. She went to her local university business school and told a professor she wanted to take a class to learn how to sell a small business. There was no such class in the curriculum. "Well, they teach plenty of classes on how to start a business. Why don't you teach anyone how to sell their business?" was her response.

Good question. It seems logical that once students get out in the real world and start the wheels of commerce moving, they should also learn how to plan on hitting the brakes on these businesses one day. Well, Alma and many other older installers never planned for business succession or an orderly retirement, so they keep on working.

## THE FUTURE IS BRIGHT

"Who's going to take over? I have no idea. You have to be willing to put in more than eight hours a day. If they think they can do it working 8-5, they are sadly mistaken," Alma says. "There's job security for us. The younger generation doesn't seem to want to work anyways."

Well, Alma, I'll argue with you on that point. I've met plenty of hardworking young installers with a great work ethic who are running successful businesses. The younger installers give me some hope for the future of the industry. And I think there are plenty more where they came from.

But it's been really challenging getting the word out about the huge potential of the onsite industry. We know the opportunities are endless with so much new development on the horizon and so much work to do to rebuild a

**"What I do is the most fun I have ever had in my whole, entire life. How many people can say that about their jobs?"**

I really want to sell my business, but if nobody wants to give me anything for it, I can work till I drop."

**Alma Tippins**



stronger wastewater treatment infrastructure. And Alma recognizes how much additional maintenance work is out to care for the aerobic systems built by her business.

"Nobody is going to quit pooping. It's just not going to happen," she jokes.

Alma went into the installing business 27 years ago. In that 2006 profile story in *Installer*, she explained that she had raised a family, then obtained college degrees in forestry and environmental science and worked for the U.S. Forest Service. Laid off from that job and with no success finding a contractor to service her own aerobic system, she quickly decided she could build and maintain wastewater systems.

## A BOSSY BOSS

Many years later, she's up to 1,005 system installations and has averaged one installation per week for many years covering a wide area of Texas' Piney Woods region. Soils in the area are sand over heavy clay, which has necessitated her to install advanced treatment systems 90% of the time. When she's not supervising an installation, she's providing continuing service for those 1,000 systems.

How does she do it at an age when many contractors have been sipping cocktails on the back porch in retirement for many years?

Delegation is the key. Alma utilizes contract labor. She continually hires a loyal backhoe operator who is an independent contractor. The same goes for electrical work, drainfield installation, etc. She also earns a living furnishing a pumping contractor with steady leads for routine service of her customers' tanks. You won't find her behind the controls of a big excavator or at the working end of a shovel in a trench.

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"I boss people around and write checks. I sit under a tree in a chair and talk to customers. It's a woman's dream job; somebody pays me for talking," says the feisty entrepreneur. "When you get old, you work smart; you don't work hard. I don't know how much longer I can keep on working, but as long as I have fun I'm going to keep on."

If the average age of installing contractors is in the 50s and 60s, many who are reading this can relate to the physical challenges Alma faces, even though she's mostly sitting in a chair and bossing people around. She suffers from Type 2 diabetes, which is unfortunately striking a growing number of older people. And her legs are growing weaker, she says.

This is the plight of so many installers who are yearning for a practical retirement plan. If there is not a next generation waiting to take over — which is the case for Alma, whose children aren't interested — the need for an exit strategy becomes more pressing with every turn of the calendar. How do you advertise your business for sale? What are the steps to place a value on the company you've built over a lifetime? What are the ways you can make that business more attractive for a buyer?

## KEEP ON KEEPIN' ON

These are all issues we have addressed in one way or another over the years in this magazine. Alma's question to the business professor was a simple one — why don't they teach small business owners how to sell out and retire? I'm sure the appropriate consultants exist to pass on these valuable lessons; but it's also true that too many contractors likely put off addressing these questions soon enough to allow a smooth transition to retirement.

This leads to situations like Alma's, where she's working well into her years of collecting Social Security checks. But deep down, that seems OK to her.

"I've got my funeral planned; you can't live forever. But if you have a job you really enjoy, it doesn't feel like work," she says. "What I do is the most fun I have ever had in my whole, entire life. How many people can say that about their jobs? I really want to sell my business, but if nobody wants to give me anything for it, I can work till I drop."

Personally, I hope that day is a long, long time from now. And I hope we'll hear from Alma about her progress in another 16 years.



▲ After 27 years in the industry, Alma Tippins does most of her work from a lawn chair, supervising her team of contractors. (Photos courtesy of Alma Tippins)

## Drop Us a Line

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## SHOO, FLY A Solution for Sewer Flies

Sewer flies breed in drains, septic tanks, sewers and soil that has been contaminated with sewage. They thrive in extremely moist and wet areas, feeding on all different kind of organic materials and their buildup, and therefore a septic tank is a perfect location for them. If a homeowner complains about sewer flies, here's how to locate breeding spots and eliminate them. [onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)



## Overheard Online

"If possible, allow employees to experience some variety in their day-to-day work, rather than feeling like they're just repeating the same basic tasks day in and day out."

– *How to Keep Employees Engaged and Productive*  
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## RENT, LEASE OR BUY 6 Questions Before Acquiring a Skid-Steer

You have a job where you need a skid-steer. But determining the best avenue for acquiring one isn't always an easy task. There are a lot of factors to consider. This article outlines six questions to ask yourself before making a decision to rent, lease or buy a skid-steer. [onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)

## DESIGN OVERVIEW

### Site Plan Evaluation

Every onsite septic system begins with a design plan — and a careful review of that plan. Aside from details on the system itself, the plan helps the installer get a sense of what machinery to use, where to stockpile materials, and the general logistics for construction staging. This exclusive online article gives an overview on site plans and what an installer should be familiar with before beginning any project. [onsiteinstaller.com/featured](http://onsiteinstaller.com/featured)



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» Luke Rotti is behind the controls of a John Deere 130G excavator during a septic system installation. (Photos by Scott Eisen)

# A NATURAL TRANSITION

From a startup in general excavation and site work, Luke Rotti developed a thriving specialty in onsite wastewater treatment

By Ted J. Rulseh

**L**uke Rotti grew up around excavation equipment. His grandfather was an equipment operator. His father always had tractors and other machinery around. So after high school in 2007 Rotti went to an equipment trade school. Two years later he and his dad, Tim, launched a business doing small landscaping and backhoe jobs.

But then something changed. They began installing septic systems in 2012, and now it's the company's specialty. "I just enjoy the science of onsite treatment, how it all works," says Luke Rotti. "I don't like doing something if I don't have a full grasp of it."

"There are guys doing site work who know a lot more about it than I do. On the septic side, I know as much as anybody else around here. That's the side I really understand. I enjoy doing it. I know all the players involved with it, they're all good people, and I like dealing with them."

Today the company, Rotti and Son, has six full- and part-time team members, working out of Templeton, Massachusetts, in a fast-growing exurban area about an hour west of Boston. Onsite installation, including repairs and replacements, accounts for about 70% of the business. General excavation comprises 15%, and the rest is perc testing, time-of-sale inspections and snow plowing.

"There are guys doing site work who know a lot more about it than I do. **On the septic side, I know as much as anybody else around here.**"

**Luke Rotti**

The business saw 33% overall growth and 55% septic installation growth from 2020 to 2021, and the pipeline is steadily full. "We've got more work lined up ahead of time than we've ever had in the past," Rotti says.

## MAKING HIS WAY

After finishing trade school, Luke Rotti went to work for an excavation company. Then the recession of 2008 put him out of work. "I went home and decided to give it a shot on my own," he recalls. "My mother and dad helped me get the business started and put me in touch with a lawyer to draw things up."

"We started out just doing landscaping and small backhoe jobs. I worked for myself in the morning and then worked second shift at a local ski hill, doing painting, cleaning and carpentry in summer, and in winter anything from cleaning the building to running the Sno-Cats. That paid the bills for the first year or two."

Tim Rotti started by helping his son on weekends and as he had time, and was always available to work through business strategies and financial decisions. After retiring from his job in electrical engineering and safety in 2021, he took a more active role, maintaining equipment, assembling materials for jobs and doing onsite system inspections. Luke takes care of project quotes and oversees fieldwork. His mother, Janice, keeps the books; Earl Baxter is a laborer and equipment operator; Derek Boudreau is an equipment operator and CDL truck driver. Rick Makela is a part time CDL truck driver.





The business started with one mini-excavator and one skid-steer. They upgraded the equipment steadily as they grew, and now the inventory includes:

- 2017 John Deere 130G excavator
- 2019 Kubota U-55 mini-excavator
- 2016 Kubota SVL-75 tracked skid-steer and Paladin Power box rake
- 1997 CASE 580 Super-L backhoe
- Two dump trucks (1998 Mack Rd-690 tandem with a J&J dump body and 2018 Ram 5500 with a Crysteel dump body)
- 2019 and 2012 Ford F-350 pickup trucks
- 20-ton equipment trailer (Econoline Trailers) and 8-ton tilt deck equipment trailer (PJ Trailers)

### CREATING A SPECIALTY

Luke had plenty of help in the transition to onsite: “I was lucky enough to have a local installer, an engineer and a health inspector mentor me and spend time showing me how to put systems together.” He is a licensed



## Rotti and Son

### Templeton, Massachusetts

**Owners:** Tim and Luke Rotti

**Founded:** 2009

**Team members:** 6

**Service area:** Middle part of Massachusetts centered in Worcester County

**Business mix:** 70% system installation, 15% excavations, 15% time-of-sale inspections, perc tests and snow plowing

**Specialties:** Onsite system installation, repair and replacement, new home site work

**Associations:** Town of Barrie Conservation Commission

**Website:** [rottianson.com](http://rottianson.com)

"I was lucky enough to have a local installer, an engineer and a health inspector mentor me and spend time showing me how to put systems together."

**Luke Rotti**

system inspector (as is his father) and soil evaluator. Installer licenses in the state are issued by individual towns; Luke is licensed in about two dozen within the compact service territory centered on Worcester County.

"I got on the board of health in my town (Templeton) and was involved in onsite from that side," Luke says. "We just made it our niche. There are quite a few companies here that do septic systems, but most of them do it as part of their other work; they don't specialize in that side. Being a soil evaluator really gives me a leg up because most installers don't have that license. It puts me in a position to be involved from the very beginning to the actual installation."

The service area consists largely of bedroom communities that have seen a building boom. "Ten or 15 years ago, we were on the outer edge of where property values started to go up," says Luke. "As the towns east of here get built up, more and more people are moving this way. There's a lot of new construction, but most of what we do is replace systems at existing houses." The new homes are typically 2,000 to 2,500 square feet with three to four bedrooms on lots two acres or larger.

## TERRAIN CHALLENGES

"We have a lot of glacial till where there can be a huge difference in soils from one lot to the next," says Luke. "Then we have river valleys where there's really nice sand and gravel. The majority is glacial till with a relatively high water table, around 3 feet."

The majority of systems are traditional stone and pipe because the large lots allow room for them. On tight lots, such as for replacements at older homes, Enviro-Septic passive treatment systems from Presby Environmental Products, a business of Infiltrator Water Technologies, come into play. They allow some reduction in leachfield size and also work well on slopes.

The company does not install aerobic treatment units, which are uncommon in the area: "We do quite a few pump systems, usually at existing houses where we can't get the pitch to work with the offset between the groundwater and the trenches."

Most such systems use Liberty LE41 pumps with three floats: on and off for the pump and an alarm float connected to a panel (SJE Rhombus) in the basement. Luke's brother-in-law Jeff O'Connor, a licensed master



▲ Derek Boudreau works with a Tuf-Tite riser and lid on a new septic tank installation.

electrician, does the wiring. Septic tanks come from local pre-caster Graves Concrete. Plastic risers are typically from Polylok.

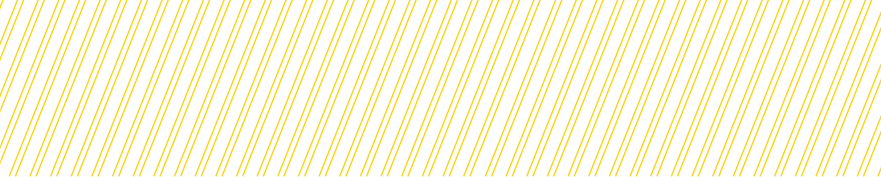
## CAREFUL REGULATIONS

Massachusetts onsite regulations are strict. The state code requires a 4-foot separation from the water table to the bottom of the leachfield trenches. "So we end up with a lot of raised systems where we bring in 200 to 500 yards of septic sand to make the groundwater separation," Luke says.

On top of that, each town has its own board of health and can enact regulations stricter than the state's. "Most go strictly by the state code, but some towns have 10 pages of additional town-specific regulations."

Not all towns require effluent filters, but Rotti and Son always includes them. "I've had some people push back on it," says Luke. "But I explain that they would rather have a filter clog up than have all those solids make it out of the tank and in 10 years plug up the leachfield. We have a sheet we give everybody with pictures that show exactly how to clean the filter, how often to clean it, and how to re-install it in the tank." Effluent filters are Polylok PL-122 and PL-68.

Soil evaluations are detailed. They include two observation holes 8 to 10 feet deep and one perc test in each proposed leachfield location. "On an existing house where we're replacing the septic, if there's no perc test on file



» Luke Rotti, left, and Earl Baxter organize the lids for Tuf-Tite risers being installed in a new septic system.



from the last 10 to 15 years, we have to do a new perc test. So on an existing house, we do two deep holes and one perc test. On new construction we do that process twice, because we have to plan a primary leachfield and a reserve where a replacement could be installed in the future.

System replacements are common because the area has many older homes with systems installed before the current state code was adopted in 1995. Failures are often detected during time-of-sale inspections. The state requires inspectors to complete a standard 17-page report that spells out specific failure criteria.

“We document everything,” says Luke. “We take pictures. We run a drain camera and locator (RIDGID SeeSnake) down the line. If a system fails, we make sure it’s well documented why and how it failed.”

## PERSONAL TOUCH

Rotti and Son does some business with homebuilders, but about 80% of customers are individual property owners.

“I prefer, to work directly with the customer,” says Luke Rotti, co-owner. He likes the personal contact and the chance to educate the owners on how to care for their systems. Dealing with homeowners is also more profitable.

“A lot of the builders here deal in spec houses,” says Rotti. “They build 25 to 30 houses a year, and they want things done really fast and inexpensively. The builders we work with tend to be custom homebuilders. They have a clientele that is willing to pay a little more money to have the yard come out the way they want it to.”

There are also scheduling issues when dealing with homebuilders. “When we go to do a new house lot, we dig the cellar hole and put in the driveway. Then we have to let the framers get in there, and then we come back and put in some piers, and maybe do the septic system. Then we come back later and do the lawn. We’re in and out for four months.

“If we put in a new septic system at an existing house, we can be in and out of there in a week or two and on to the next job.”

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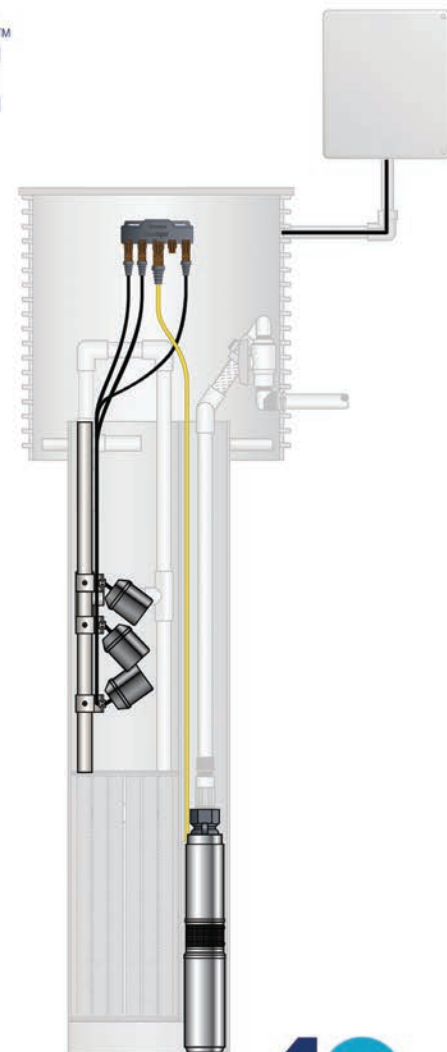
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"I've probably have turned away as much work as I've do over the last couple of years. If I can get some good people who can help me get more done, we can really keep growing."

**Luke Rotti**

## FINDING WORK

Most of the company's business comes through word of mouth and good relationships with engineers, real estate agents and board of health inspectors. Other leads come through sponsorships of community events and from contact information painted on trucks kept looking consistently sharp and clean.

Rotti also built connections by serving three years on the Town of Templeton Board of Health. While he has left that position, he now serves on the Town of Barrie Conservation Commission, which enforces local wetlands protection regulations.

Good word of mouth comes from treating people well. "We try to be a little more caring toward our customers," says Luke. "When I write up an estimate, it's a full page explaining exactly what's happening. A lot of people appreciate that. We take time to explain what is involved, why it has to be done, and what the code requires.

"If a system needs an extra load of loam to make it look good, or if we quoted 300 yards of septic sand and it took 350 yards, nine times out of 10 I'm not going back to the people and telling them we have to add to the price."

▲ The Rotti and Son team includes, from left, Luke Rotti, Rick Makes, Tim Rotti, Derek Boudreau and Earl Baxter.

One key challenge is hiring and retaining quality people in a market where it's difficult to compete with big companies that offer higher pay and rich benefits. "We try to create a good working environment where everybody gets along," says Rotti.

There's every reason to be optimistic about the future as the area continues to grow. Says Luke, "There is so much work around here. I'm 32, and most of the guys who are doing this are in their 60s. It seems there's more and more work and less people doing it.

"I've probably turned away as much work as I've done over the last couple of years. If I can find some good people who can help me get more done, we can really keep growing." ■

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# Clean Water Boosters Sue to Stop Montana Water Standard

By David Steinkraus

Last spring, the Montana Legislature abolished numeric standards for phosphorus and nitrogen pollution and replaced them with a “narrative standard,” which generally describes desired conditions for a waterbody free of pollution. The law took effect March 1, and on March 24 Upper Missouri Waterkeeper filed a federal suit against the U.S. Environmental Protection Agency for failing to act.

In its suit, Waterkeeper argues that EPA should have taken formal action to approve or disapprove Montana’s change in standards, as required by federal law. Waterkeeper also says the new standard fails to adequately protect water quality.

“Under the Clean Water Act, states can’t lawfully roll back science-based standards that protect waterway health — as Montana has done — and put forth unproven and ineffective pollution control programs that let polluters off the hook for doing their fair share to protect water quality,” Guy Alsentzer, Upper Missouri Waterkeeper executive director, said in a press release.

Instead of using numbers, the law mentions regulating discharges of phosphorus or nitrogen that create conditions toxic to human, animal, plant and aquatic life; create conditions that produce undesirable aquatic life; or cause measurable changes in aquatic life.

When the bill was passed last year and signed into law, Alsentzer said standards relying on, for example, the presence of algae blooms are reactive instead of proactive. “It’s much better economics to keep something clean than it is to pay to fix it when it’s polluted,” he said, according to the *Missoula Current*.

After the lawsuit was filed, state Sen. John Esp, R-Big Timber, and one of the sponsors of the new law, said Montanans could face higher water and sewer costs to pay for treatment, according to the *Montana Free Press*. “We haven’t even finished writing the rules to implement (Senate Bill) 358, so it’s kind of disappointing that Waterkeeper chooses to go to court instead of sitting down and working around the table with the rest of us,” Esp said.

## New York

Suffolk County is considering formation of a water district to help fund advanced onsite systems. There is no formal proposal yet, but the question may come before voters in November, reports the *Shelter Island Reporter*.

In discussion is an annual \$60 fee for all property owners. The money would form the basis of a fund for onsite system replacements. Fund money would be split with 75% dedicated to system installations and 25% to infrastructure for the systems. Areas of the county with onsite systems would have the option of joining the fund.

The county occupies the eastern tip of Long Island, and for several years it and its municipal governments have been passing laws to require

nitrogen-reducing onsite systems. Hundreds of thousands of Suffolk County homes are served by cesspools, and those have been linked to nitrogen pollution and algae blooms along the county’s Atlantic Ocean coast.

## North Carolina

A staff shortage has severely delayed onsite system permits in Moore County. The problem is a shortage of people in the county’s sewage site division, reports *The Pilot* in Southern Pines. Four of seven positions are vacant.

Coupled with rapid growth all over the county, this means applicants may wait up to six months for a permit, said Matt Garner, interim director of the county Health Department. Permits are typically issued in 30 to 90 days.

The county has a population of about 103,000, according to the U.S. Census Bureau. Population increased about 3% from 2020 to 2021, and 13% from 2010 to 2020.

## Indiana

Wayne County stopped work on its onsite ordinance because of uncertainty over action by the state Legislature. House Enrolled Act 1245, signed by Gov. Eric Holcomb, changes the rules for counties. It prevents a county health department from denying some onsite permits if they have been approved by an engineer, Christine Stinson, executive director of the county health department, told the county’s board of health.

She said the Legislature’s original bill did not stir local opposition, reported the *Richmond Palladium Item*, but subsequent amendments did. One, which was removed before the final vote, would have forbidden a county from having an onsite ordinance more restrictive than the state’s.

In February, Stinson gave the health board a proposed onsite ordinance for consideration, but she said it is now on hold until there is more clarity about what state government has done.

## Ohio

As it has for several years, the Jefferson Soil and Water Conservation District can help people with the cost of replacing or repairing failing onsite systems. Wendee Dodds, natural resources specialist/operations manager for the district, announced \$150,000 in funding from the Ohio Environmental Protection Agency.

To be eligible for help, household income must be less than 300% of federal 2020 poverty guidelines. But the amount of assistance varies in relation to how high household income is, according to information on the district’s website.





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For example, a household of one to four people at 300% of the poverty guideline (\$78,600) qualifies for assistance equal to 50% of project cost. At 100% of the poverty guideline (\$26,200), that household is eligible to receive 100% of the cost. Project cost includes permit fees, soil evaluation and engineering work in addition to the system itself.

### Pennsylvania

Watts township supervisors will decide whether residents will be required to have their onsite systems pumped regularly. A proposed ordinance would require pumping every three years and is part of the township's Act 537 plan. Those are required by the state to govern onsite inspections, enforcement and other matters, reported the *Perry County Times* in Mechanicsburg.

If the ordinance is passed, groups of 222 systems would be inspected annually. Systems at newly constructed properties would have to comply with inspection rules three years after the first use. A fee of \$33 per property would be assessed to cover the county's cost of overseeing the program. □

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

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## SYSTEM PROFILE

Mountain Madness technician James Johnston installs Eljen modules in the soil treatment area.



# Septic Makeover at a Presidential Mountain Retreat

Historic preservation rules dictated minimal landscape changes for a new onsite system at Dwight Eisenhower cottages in Colorado's high country

By Tim Dobbins

**N**estled on the western slopes of the Rocky Mountains along the Frazier River are a series of small cabins President Dwight Eisenhower used before and during his time in office. One was his family's personal vacation cabin, and another was for his Secret Service detail.

Located in Grand County, Colorado, the structures consist of two older log cabins where President Ike stayed in the 1940s (currently protected under historic preservation rules) and next to those are two newer dwellings built in 1953 where he stayed multiple times during his presidency. It's said shortly after his nomination to be the Republican candidate for president, Eisenhower met his running mate for vice president, Richard Nixon, at the property to get to know him and strategize a campaign while wetting a line for trout.

Fast forward to early 2021 when contractor Rob McManigal purchased the Eisenhower fishing cabin historical property housing the two newer cabins with the goal to make them a functional homestead for his family. For that to happen, a new onsite wastewater treatment system was needed.

"The old system was all copper and cast iron plumbing and as soon as it left the house it went to clay tile," McManigal says. "I got a hold of L.L. Kourse, and I think it only took about two weeks from the first time we talked to actually getting the new system in place. She did the engineering and with my ties as a contractor we got the excavator in quick and got it done."

For a system built in the 1950s, parts of the original septic system had aged well. "The leachfield was really well done. It had a good gravel bed



## System Profile

**Location:** Fraser, Colorado  
**Facility served:** McManigal property, Eisenhower historical site  
**Designer:** Lauralee Kourse, LTD Inc.  
**Installer:** Mountain Madness Excavation  
**Type of system:** Mounded Gravity-fed with Eljen GSF  
**Site conditions:** Sandy loam with some gravel and rock  
**Hydraulic capacity:** 525 gpd

◀◀ The original flagpole had to be left in place as part of the historic site, so the treatment area consisting of Eljen GSF 42 modules was installed around it.

▼ The three-chamber precast concrete septic tank set in place with Roth risers installed and plumbed to a distribution box. Plumbing from the septic tank to distribution box was covered with 2-inch closed cell foam insulation to help combat the Fraser River Valley's freezing temperatures.

system and because it had only been used intermittently, it held up great," says Kourse, the system designer. "But with modern technology and Rob here now with his family, he wanted to do the right thing and make sure the system could support them."

The design and install went quickly thanks to McManigal's involvement as a contractor and Kourse's experience as a designer. Also, the changes needed weren't too extreme. "Everything is basically the same with the system design except with better technology for a more efficient footprint," Kourse says.

### Historical digging

The site's historical significance along with its geographical position created some obstacles for design and excavation. "We had to rebuild an OWTS with the same general footprint as the original septic system," Kourse says. "A fluctuating water table and a location so close to the Fraser River required that the elevation of the system be carefully considered."

Another challenge is the Fraser River Valley only has about 30 frost-free days per year, making a narrow window to execute the dig. Aside from that, the fact it's a designated historical site means that the original exterior of the buildings must be preserved as they were, as well as the existing fishing ponds, historical ditches and flumes and a flagpole, which happens to be located in the leachfield.

The challenges didn't discourage Travis Wagner, operations manager at Mountain Madness Excavation, who took on the project. Within four days he and his team were admiring a job well done.

The first day consisted of making room for the new system. "The old septic tank was still in place. It was an old soft-steel cistern that was pretty



## SYSTEM PROFILE

➤ Homeowner and contractor Rob McManigal used his own Caterpillar skid-steer to do the final cleanup, slightly mounding the soil treatment area.

much rotten,” says Wagner. “We were able to pump the water out of it, fill it in with sediment and shift the new septic tank over a couple feet to avoid it.”

With the old tank taken care of, Brain Munro, owner of Mountain Madness, James Johnston, operator, and Wagner dug and set the new one. The next day, the distribution system was installed, the third day was backfilling and on the last day the team did the final grade.

To get the job done, Wagner and his team relied on a Link-Belt 235X excavator and a Bobcat T76 tracked skid-steer for the project.



### System flow

The Mountain Madness team attached 4-inch Schedule 40 PVC pipe to the main living cabin's existing cast iron pipe and installed a two-way cleanout roughly five feet from the exterior wall. After the cleanout, another length of pipe was installed and connected to a septic tank. The span of pipe is set at a 2% grade and runs in a straight line to support gravity flow. The plumbing is also bedded with a minimum of 2-inch crusher fines on all sides.

Plumbing from the Secret Service cabin was connected in a similar way, but piping used was 4-inch SDR35 PVC. It connects to the drainline from the main cabin using a wye fitting, before emptying into a precast concrete 1,500-gallon, three-chamber septic tank located approximately 30 feet from the main cabin. The septic tank was manufactured by Front Range Precast Concrete in Commerce City, Colorado, with Roth 12-inch risers cast into the tank.

“While it's a modern solution to handle modern-day use of a full family, this system is maintaining a historical site and an environment while keeping it as beautiful as it always was.”

L.L. Kourse

The septic tank has two settling compartments and a pump compartment. Between the second and third chamber, is a 4-inch Orenco Biotube filter to add another level of biological filtration and to keep solids from entering the pump compartment.

A Goulds Model PE51, ½ hp submersible pump moves effluent through a 4-inch perforated SDR35 pipe into a precast concrete distribution box, also manufactured by Front Range Precast Concrete, which evenly disperses effluent to the primary treatment zone. This zone consists of perforated pipe

centered above four rows of trenches; each housing eight Eljen GSF 42 units placed over a 6-inch bed of sand.

The total area of the leachfield is roughly 16 feet wide by 33 feet long totaling about 528 square feet. Due to the fluctuating water table levels in the area, the leachfield is mounded. All perforated pipe in the system is covered with 2-inch closed cell foam insulation to help protect against freezing. In case freezing did occur, or if the effluent pump were to fail, an SJE Rhombus high-water alarm is positioned in the pump compartment of the septic tank.

“The stars were in alignment in 2021,” Kourse says. “A thoughtful and diligent homeowner and general contractor, Rob, and a really good excavator, Travis, were the real stars.” Even with the challenges of location and historical significance, the Eisenhower fishing cabin project was a success from start to finish.

“While it's a modern solution to handle modern-day use of a full family, this system is maintaining a historical site and an environment while keeping it as beautiful as it always was,” Kourse says. □

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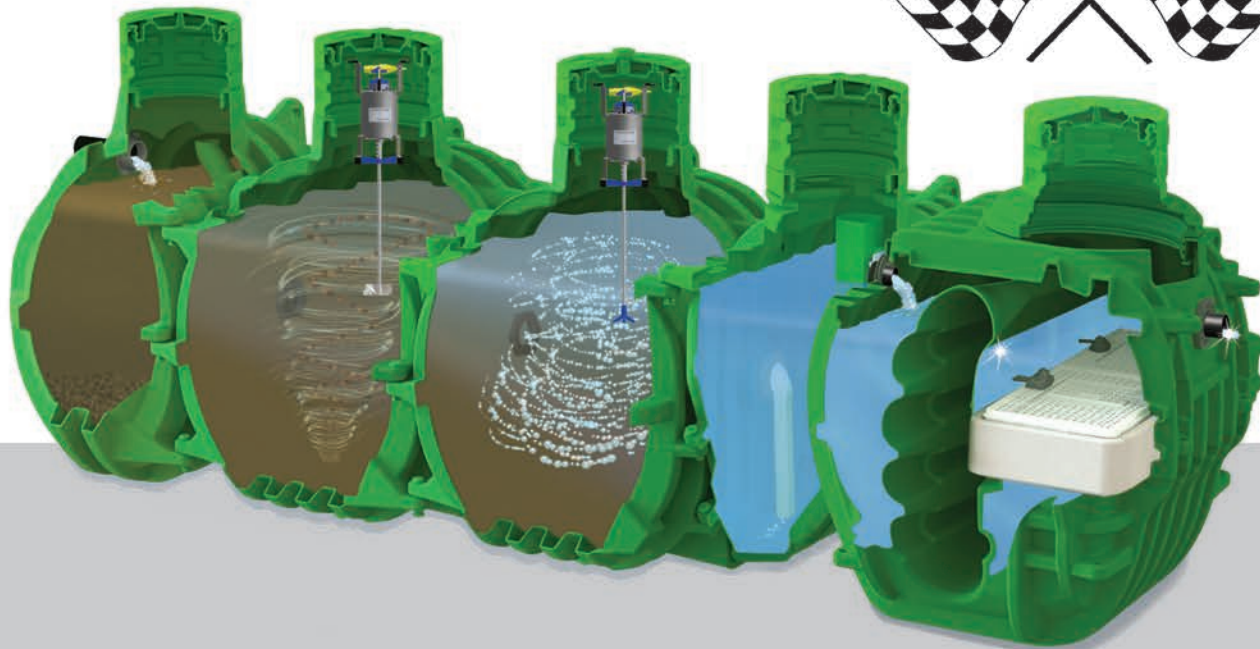
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# Before the Excavator Moves, Have an Erosion Control Plan

Installers face greater scrutiny where sediment can have an environmental impact on sensitive wetlands

By Jim Anderson and Dave Gustafson

In the last decade or two there has been an increased interest and focus on erosion and sediment control on construction sites by permitting authorities. This has meant additional requirements for installers. These measures are important to prevent soil from washing into our lakes and streams. Keeping soil from washing into the surface water also reduces nutrient delivery. Halting the threat of phosphorus and other contaminants helps reduce lake algal blooms.

As a part of the permitting process, installers are often required to prepare a stormwater pollution prevention plan. Sensitive areas to be protected should be identified. Sensitive areas are often lakes, streams, wetlands or ditches. Other sensitive areas need protection from runoff and sediment accumulation, such as areas with endangered or protected vegetation. In our area an example of a protected plant would be lady slippers. In a place like Arizona there are certain cactus species that need to be protected.

Work with local planning and zoning officials to identify all potential areas that need protection. Having the plan in place and approved ahead of time will eliminate a lot of headaches later, like having to stop in the middle of an installation to address erosion and runoff concerns. The best way to prevent soil from moving off site is by keeping the disturbed area as small as possible and shortening the duration of time these areas are open to erosion. Including the sequence of installation as a part of the erosion plan can stop a problem before it becomes one.

Given the area usually involved with installation of an onsite sewage treatment system is not that large, this involves installing a silt fence to stop erosion and leaving it there until vegetation is established after the project is complete. We thought it would be good to review how to properly install a silt fence.

## LOOK AT TERRAIN

Just like many other parts of installing a good septic system, plan for properly locating the silt fence. First choose the appropriate place to set up a silt fence by considering site terrain and slope, water flow and projected soil disturbance during installation. Set the silt fence perpendicular to the slope of the land, curving the fence inward toward slope. It should be placed at the bottom of the slope to intercept runoff before it reaches the area to be protected. It should be spaced away from the toe-of-slope, leaving enough room to accumulate sediment.

In the location dig a 6- to 8-inch-deep trench (either V shaped or flat-bottomed) directly up-slope or upstream of the silt fence. On the downstream

Merely installing the fence is not enough. **It needs to be maintained during the installation and until the disturbed area has vegetation established and the site is stabilized.**

edge, drive in wood stakes, rebar or steel stakes at least 1 foot into the sediment. The stakes or rebar should be long enough to accommodate the trench depth and height of the silt fence fabric. Run a continuous length of fabric along the inside of the stakes and into the trench. The fabric should extend 2 to 3 feet above the soil surface. Secure the fabric to the stakes with nails, staples or zip ties allowing at least 1 foot at to line the trench. The trench should be backfilled with soil or rock. This keeps the fabric in place when water and sediment run from upslope.

A common problem we have seen with silt fence is that the trench was not part of the installation process. The fabric is attached to the stakes, but the fabric only extends to the soil surface. This makes the fence less effective at capturing sediment and a large amount escapes past the fence.

At each end of the fence, the fabric should be wrapped uphill so the water and sediment cannot just collect behind the fence and then run around the ends, defeating the purpose of the fencing. Use a continuous piece of fabric whenever possible, avoiding having a seam which could become a point of failure. If a joint is necessary, overlap the fabric at least the width of one stake spacing and secure in place using another stake.

## A WATCHFUL EYE

Merely installing the fence is not enough. It needs to be maintained during the installation and until the disturbed area has vegetation established and the site is stabilized. The fence should be periodically checked for damage to the fabric or for failure to withhold sediment. Fix or install additional backup silt fence if needed.

Sediment should be removed before it reaches one-third the height of the silt fence. It is especially important to inspect the fence to make sure it is doing its job. Very often we have seen cases where the fence has had sediment behind it but since the fence was not maintained it has allowed sediment to move beyond the fence. When the fence is no longer needed, it should be removed so it is not an eyesore for the homeowner. **□**



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# He's a Designer, Installer, Pumper ... and Dancer?

High-stepping Dwayne Crocker preaches professionalism and hard work through involvement in the Georgia Onsite Wastewater Association

Compiled by Betty Dageforde

*In Snapshot, we talk to a member of a state, provincial or national trade association in the decentralized wastewater industry. This time we visit a member of the Georgia Onsite Wastewater Association.*

## **Dwayne Crocker, owner/operator**

**Business:** Crocker Septic Tank Service, Kathleen, Georgia

**Age:** 57

**Services we offer:** We pump, install and repair septic systems. We also manufacture 70 to 90 concrete tanks a year, anything from 500 to 3,000 gallons. And my favorite thing is designing. I love drawing and laying out designs.

**Years in the industry:** 34 years. But the business is 40 years old, started by my dad, G.L. Crocker.

### **Association involvement:**

A member of the Georgia Onsite Wastewater Association for eight years, currently serving a third term on the board of directors. And I teach continuing education classes.

### **Benefits of belonging to the association:**

I enjoy being able to participate in building a bridge with others in the industry. But, most of all, it's having a voice that's heard. Being on the board carries weight working with the Georgia Department of Public Health. If we have to function under the regulations placed on us, it's nice to know that our experience in the field is taken into consideration. And we have somebody sitting at the state level in the legislature looking for things that could be coming our way.

### **Biggest issue facing your association right now:**

Membership is our biggest downfall — and getting members to serve. GOWA is good for the industry so I don't understand why our numbers are so low. It's here to recognize, promote and support the industry. We're fighting for everybody whether they're a member or not, so maybe people think, "Why even be a member?" But you need those fresh new ideas, new blood, to energize and move this association to the next level.



▲ Dwayne Crocker (right) with his father G.L. Crocker, and technician Shawn Thomas. The equipment is a CASE 55B excavator and Massey Ferguson L105E loader.

### **Our crew includes:**

Shawn Thomas works with me. He and I like to compete with each other to see which one can outdo the other. He's 20 years younger than me and definitely challenges me every day. That competition is healthy and it makes the job fun. Plus, we have a real good friendship. When we do a job, I'm there from start to finish and he's right by my side. And my dad just turned 81 and at the last family Christmas announced he wanted to retire. We have worked side by side for the last 34 years so it's a hard thing for me and I'm trying to make the transition. He still calls every other day and says, "If there's something you really need today, let me know."

### **Typical day on the job:**

It usually begins at 5 a.m. when I do invoices, estimates and paying bills. Shawn gets here about 6:30 a.m. and by 7 a.m. he's checked the oils, aired the tires, trucks are loaded and we're ready to pull out. We do our installs and repairs Monday through Thursday. We try to save Thursday afternoon and

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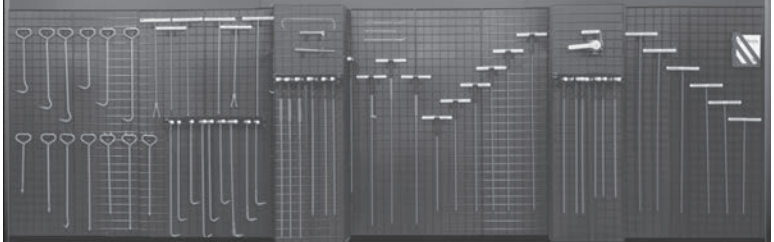


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## SNAPSHOT

» Before and after — the challenging installation of an ADS Septic Stack mound system, a bundled pipe product.



Friday for pumping so we have some relaxation. It's kind of a breather after some of the jobs we put in. We work about eight hours and then the third part of my day begins which is returning calls and texts and making appointments. We work manufacturing in. We may come in early to set up and pour concrete. The majority of our tanks are poured late spring and through summer.

### The job I'll never forget:

A mound system for a house where the soil was unusable. To be 2 feet above the water table depth, we had a negative four starting point. The water table was only 20 inches. The drainfield had to go 160 feet from the house. And we had to do this without putting in a secondary tank with a pump. I designed the system, shot the grades and laid it out. The system took 16 loads of certified sand. And we needed 18 loads of sandy fill to cover and build the perimeter walls. The mound was 120 by 70 feet and was four feet higher than any other part of the yard. I used a multi-stack drainfield. We put 350 feet of pipe into that system. It was a three-week process. But I loved it. There's just something about putting an idea on paper, creating it, and seeing that it works just the way you wanted it to.

### My favorite piece of equipment:

By far the machine I have the most fun on is my John Deere 455 track loader. I just lose track of time.

### Most challenging site I've worked on:

I did an installation 20 years ago that was on such a steep hillside that we had to remove the tires on one side of the backhoe so we could dig level ditches.

### Oops, I wish I could take this one back:

There was a system we did that had three tanks — a 1,500-gallon, a 600-gallon ATU, and a tank with a pump. We pumped that thing about 120 yards to the drainfield. We spent two weeks designing and putting it in. But I wish I had never taken the job. I knew from day one, just from talking to the owner, they were not going to finish it out and take care of it the way it needed. They ran out of money, couldn't go any further, left the system unprotected. Within the first two months they couldn't use it. I went back and fixed some things. They never got everything done but it's been working the last four years. I learned a lesson that unless someone wants to do it the right way, I'm not the (installer) they want.

### The craziest question I've been asked by a customer:

The craziest stuff is the misunderstanding by homeowners of just what a septic tank is and how it works. They might have been standing there watching

me but they'll say, "Are you sure you pumped it all out?" Homeowners do not have the understanding that once a tank is full, if you put two gallons in, two gallons goes out.

### If I could change one industry regulation, it would be:

The state says we have to have a 6-inch minimum cover over a system, which I think is not enough to cover a system safely and prevent it from damage. I'd like to see it be 12 to 15 inches.

### Best piece of small business advice I've heard:

My dad said, "Watch what everybody else does and find one thing to do above that mark." One thing I've done that goes along with that is created an album of photos showing everything from how wiring should be done on a mechanical pump and how the floats are set, to what a yard looks like before, during and after a repair. If a customer asks a question, they get a visual explanation, and because they can see it, they understand it.

### If I wasn't working in the wastewater industry, I would:

I sometimes wonder what it would have been like if I had continued as a dancer instead of doing what I do. I am a choreographer, I have coached couples who have won events, I have judged, competed, taught private lessons. And I'm still heavily into that. This year I'm going to a ballroom competition in Tallahassee, a shag competition in South Carolina, and in December I'll dance Christmas in Dixie with the United Country Western Dance Council. In April I'm doing the Dancing Stars of Central Georgia, an Alzheimer's fundraiser. I had a chance to do a movie piece with Christopher Reeve 34 years ago but we declined because my wife Kelly and I were getting married. I've danced on stage for Reba McEntyre during her costume change.

### Crystal ball time - This is my outlook for the wastewater industry:

I wish everybody in the industry would give all they could give for the protection of what they do. For a lot of people it's just all about money. Money is a huge part of it, but you have to care about what you do. One wrong thing puts a black eye on everybody. I'd like to see installers become more educated and take pride in what they do and how they do it. □

Would you like to see someone in your state or provincial wastewater trade association profiled in Snapshot?

Send your suggestions to Jim Kneiszel at [editor@onsiteinstaller.com](mailto:editor@onsiteinstaller.com).

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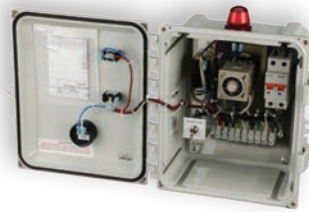
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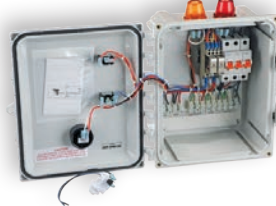
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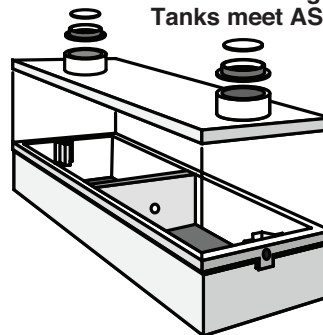
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Arkansas Onsite Wastewater Association;  
www.arkowa.com

**CALIFORNIA**

California Onsite Wastewater Association;  
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www.cpow.net; 720-626-8989

**CONNECTICUT**

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**DELAWARE**

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

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

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Onsite Wastewater Professionals of Illinois;  
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**INDIANA**

Indiana Onsite Waste Water Professionals Association;  
www.iowpa.org; 317-965-1859

**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.mainease.com

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

**MARYLAND**

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

**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

**MISSISSIPPI**

Mississippi Pumpers Association;  
www.mspumpersassociation.com;  
601-249-2066

**MISSOURI**

Missouri Smallflows Organization;  
www.mosmallflows.org; 417-631-4027

**NEBRASKA**

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

**NEW ENGLAND**

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(Massachusetts, Connecticut, Maine, New Hampshire, Rhode Island and Vermont)  
www.yankeonsite.org; 781-939-5710

**NEW HAMPSHIRE**

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

Granite State Onsite Wastewater 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

**OHIO**

Ohio Onsite Wastewater Association;  
www.ohioonsite.org; 740-828-3000

**OKLAHOMA**

Oklahoma Onsite Wastewater Association;  
918-727-7113

**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.pasma.net; 717-763-7762

**TENNESSEE**

Tennessee Onsite Wastewater Association;  
www.tnonsite.org

**TEXAS**

Texas On-Site Wastewater Association;  
www.txowa.org; 409-718-0645

Education 4 Onsite Wastewater Management;  
www.e4owm.com; 713-774-6694

**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; 888-782-6815

Wisconsin Liquid Waste Carriers Association;  
www.wlwca.com; 888-782-6815

**NATIONAL**

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

National Onsite Wastewater Recycling Association;  
www.nowra.org; 978-496-1800

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

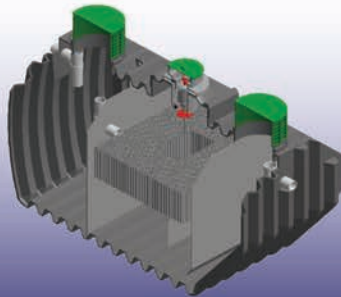


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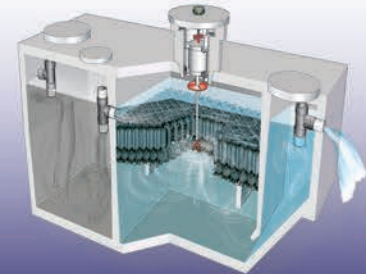
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#### BRITISH COLUMBIA

British Columbia Onsite Wastewater Association;  
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WCOWMA Onsite Wastewater Management of B.C.;  
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#### MANITOBA

Manitoba Onsite Wastewater Management Association;  
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Onsite Wastewater Systems Installers of Manitoba, Inc.;  
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#### NEW BRUNSWICK

New Brunswick Association of Onsite Wastewater Professionals;  
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#### NOVA SCOTIA

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#### ONTARIO

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Ontario Association of Sewage Industry Services;  
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#### SASKATCHEWAN

Saskatchewan Onsite Wastewater Management Association;  
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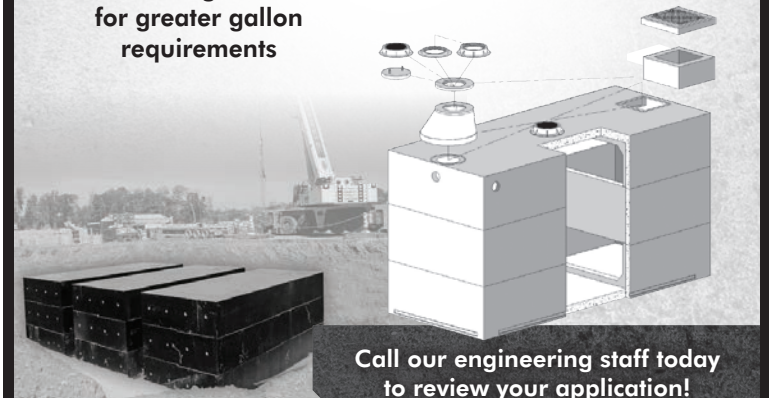
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# Alarms, Controls and Monitoring Systems

By Craig Mandli

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### Alderon Industries Vizzyalarm

The Vizzyalarm from Alderon Industries is an indoor-rated three-zone Wi-Fi alarm panel, powered by a standard 120V AC wall outlet and includes an automatically rechargeable battery. It can be connected to the cloud-based Vizzy.site to monitor and receive text and email alerts for system conditions with no monthly fees. This multipurpose alarm monitors three separate zones such as high-level septic tank, high-level sump basin, and flood monitoring. High and low temperature alarms provide 24/7 property protection. Any “dry” type sensor that “closes” during an alarm condition can be used. Use the auxiliary contacts to connect to building automation systems and phone dialers. During an alarm condition, the red LEDs illuminate, buzzer annunciates, and the auxiliary contacts activate while sending text and email alerts. The alarm automatically resets for the next alarm cycle once the sensor deactivates. 218-483-3034; [www.alderonind.com](http://www.alderonind.com)



### Anua i/o.site

The i/o.site system from Anua provides performance monitoring of electromechanical components while keeping everyone connected to information through a simple web interface. It can remotely monitor any blower, aerator, pump, float switch or motor. It tracks water use, catches motor issues before failure, uses any mobile device or computer and monitors any powered onsite system. 336-547-9338; [www.anuainternational.com](http://www.anuainternational.com)

### Liberty Pumps NightEye

The NightEye app and cloud-based system from Liberty Pumps allows internet connection of a pump via the home’s wireless router and provides alarm and other performance information to a mobile device. The system sends information via text, email and push notifications, to up to four different address/phone numbers anywhere in the world. Connected products include the ALM-EYE series indoor pump alarm, 442 battery backup pump systems and the SumpJet water powered backup pump. The system is easy to use and set up through a portable device, according to the maker. Download the free app, register the device and connect to the equipment using BlinkUP technology. The app is compatible with iOS and Android devices. There are no subscription or service fees. 800-543-2550; [www.libertypumps.com](http://www.libertypumps.com)



### MGS Nomad Solar Alarm

The Nomad Solar Alarm from MGS (Mn Geotech Services) requires no electrician and only modest math skills to setup the float at the proper depth. The unit is powered by twin 9-volt rechargeable batteries powered by two 12-volt solar panels. When the batteries are installed on a normal transistor battery connector, the unit is on. The east side of the unit has an audio switch, a voltage meter to measure current charge and test button toward the bottom. The standard configuration is for a 6-inch inspection with a weighted ball float, while an adaptor for 4-inch ports is available. 320-980-6218; [mngeoserv@gmail.com](mailto:mngeoserv@gmail.com)



### Polylok 3014AB Filter Alarm (smart alarm)

The 3014AB Filter Alarm (Smart Alarm) from Polylok is a wired indoor/outdoor filter alarm providing audio/visual warning notifying operators that a tank filter needs cleaning. The Smart Alarm Switch activates when the filter cartridge is near capacity (approximately 90% full) with solids. The Smart Alarm Switch installed in the filter sends a signal to the panel. It offers a manual alarm test switch and horn silence, an alarm horn rated to 82 dB at 10 feet, and 15 feet of cable, with longer lengths available. 888-765-9565; [www.polylok.com](http://www.polylok.com)

### SJE Rhombus Xpert Alert RF

The Xpert Alert RF system from SJE Rhombus uses LoRa radio technology to wirelessly connect the control panel to an indoor alarm system. With a range of up to 200 feet, it provides the convenience of indoor notification without having to tear up the yard to install wires. This makes it suitable for residential applications, including lift pump chambers, holding tanks, sewage, agricultural and other water applications. This system uses the Xpert Alert alarm, an RF transceiver module that attaches to the indoor alarm and an RF panel module that is installed in the outdoor panel. The RF transceiver and RF panel modules wirelessly connect the alarm to the control panel. This system is also available with the Xpert Alert Wi-Fi alarm, which provides 24/7 notification via text and/or email. The alarm is CSA certified, and the RF modules are UL/cUL Listed. 888-342-5753; [www.sjerrhombus.com](http://www.sjerrhombus.com)



## ELECTRICAL PANEL

### Franklin Electric Cerus X-Drive

Designed for variable torque applications up to 600 hp, the Cerus X-Drive is Franklin Electric's all-inclusive drive solution for a variety of markets. Available as a standalone drive and in multiple enclosed configurations, these panels are built to last, according to the maker, with every detail and component centered around the application's specific requirements. It can be paired with a choice of motors and pumps to maximize the performance of the application. 866-271-2859; [www.franklinengineered.com](http://www.franklinengineered.com)



## PUMP CONTROL PANELS

### Aquaworx by Infiltrator Intelligent Pump Control

The Intelligent Pump Control panel from Aquaworx by Infiltrator is easy to install and monitors liquid levels, controls pumping intervals, logs events in real time and calculates daily system flow utilizing a pressure transducer in the pump chamber and an embedded microprocessor in the pump controller. The Aquaworx Tapper handheld Wi-Fi programmer broadcasts a signal that allows the user to program the panel using any Wi-Fi-enabled device. Once connected, the user navigates to a website that has all control settings for the panel and provides the operator with a history of system function critical to troubleshooting and maintaining a pump-driven system. The Tapper is intended for use with multiple panels and includes a USB slot, allowing the user to capture and download system events and settings onto a removable USB memory device. 800-221-4436; [www.infiltratorwater.com](http://www.infiltratorwater.com)




### Orenco Systems 4-in-1 Controller

The 4-in-1 Controller from Orenco Systems supports numerous electrical configurations and dosing schedules within a single panel. Both simplex and duplex models are available and can be configured in the field for timed or demand dosing. While the control circuit operates on 120-volt power, the pump circuit is dual-rated for 120- or 240-volt power, meaning installers and service providers can reduce their panel inventories for new installations and repairs. It includes a programmable logic unit with multiple timing intervals for changing flow conditions and has a built-in elapsed-time meter and counter. It also displays float position and has a float error indicator. Each panel includes a reference chart to assist with troubleshooting during installation and testing as well as wiring diagrams. It is completely touch-safe. 877-257-8712; [www.orenco.com](http://www.orenco.com)



### SPI 50B019-120-240DD

The 50B019-120-240DD control panel from SPI is a duplex timed-dosing panel for use in residential or commercial applications. It can be used with 120- or 240-volt power, and it accommodates two dosing pumps controlled by a repeat-cycle timer. It has a durable, weather-resistant, NEMA 4X polycarbonate enclosure with SST latches; large, easy-to-access terminal block; circuit breakers for the pumps and control circuits; a rugged, externally mounted, UV-resistant alarm light; audible alarm and run-mute-test switch with UV-resistant sealing boot; definite purpose motor contactors; alternating relay; and pump hand-off-auto switches. Compressor hookups are available. Wiring schematic and detailed connection diagrams are provided as well as mounting feet for the enclosure. It is UL listed. 419-282-5933; [www.septicproducts.com](http://www.septicproducts.com) 



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**INDUSTRY NEWS**

**SJE names chief information officer**

Tim Fowler has joined the SJE leadership team as chief information officer, a new position for the company that will oversee IT initiatives and the current IT team. He will be based at SJE in Plymouth, Minnesota. Before joining SJE, Fowler held a series of roles at Polaris Industries.



**Liberty Pumps building new material handling center**

Liberty Pumps' new material handling center is under construction and on track to be completed by the end of 2022. The 107,000-square-foot expansion will house both raw and finished component inventory, and allow for more efficient tracking and flow of components to manufacturing. The expansion will also allow for additional manufacturing space in Liberty's current building when material storage is moved to the new facility.

**SJE acquires Massachusetts-based Horlick Co.**

SJE has purchased Randolph, Massachusetts-based Horlick Co., a manufacturer of custom control panels and motor-generator sets for commercial and industrial markets. Horlick will continue to operate out of its current facility in Randolph, marketing under the Horlick brand. Shawn Hennessey, who has managed the day-to-day business for the past 27 years, will continue as director of operations. □



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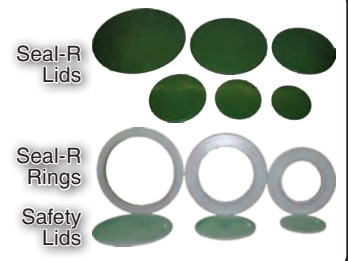
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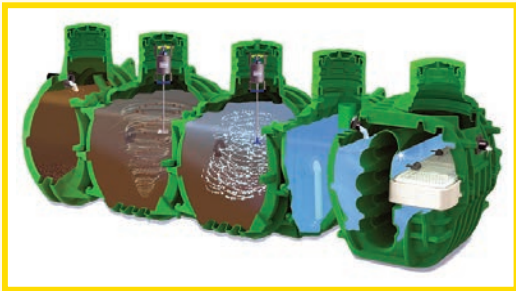
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### PRODUCT SPOTLIGHT

## Singular HK Green designed for the most environmentally sensitive areas

By Craig Mandli



Norweco engineered the Singular HK Green with the idea of manufacturing an efficient system that would protect the environment and water resources while achieving high-end treatment results.

“The Singular HK Green wastewater treatment system is specified in areas that require significant and consistent reduction of total nitrogen,” says Annette Simon, sales and marketing coordinator for Norweco. “This hybrid system combines both suspended and attached growth biological processes to produce superior effluent results.”

The system consists of pretreatment, anoxic, aeration and clarification chambers, followed by the Bio-Film Reactor. It uses an extended aeration process to treat wastewater and features technology to enhance or optimize denitrification. Wastewater in the system undergoes a 70-hour retention to ensure adequate exposure to all treatment processes.

“The Singular HK Green utilizes the Singular mixer, which has been engineered and designed to enhance nitrogen removal,” Simon says. “This component eliminates the need for a recirculation pump and additional system plumbing, which significantly simplifies the installation, operation and maintenance of the system.”

Using a patented non-mechanical flow equalization device, the Singular HK Green is engineered to treat all incoming wastewater even during heavy use periods before it enters the Bio-Film Reactor with the proprietary attached growth filtration media for final treatment.

According to Simon, the Singular HK Green system complies with U.S. Environmental Protection Agency wastewater treatment guidelines for secondary treatment systems, and exceeds all requirements of NSF/ANSI standards 40 and 245. These evaluations indicate the system’s performance can meet or exceed effluent standards for the most ecologically sensitive areas, she says.

Singular HK Green systems are built from rotationally molded, UV stabilized, high-density polyethylene with a multidirectional ribbed design for added durability. They are designed to be leak-proof, corrosion resistant and weigh roughly 1,275 pounds.

Every system comes with a Service Pro WASP control center that features a programmable LCD screen, three circuit breakers, a factory preset logic TV monitor and control, and mixer operation. Optional telemetry is available. A phone, internet or cellular communication module can be added.

According to Norweco, the Singular HK Green provides consistent performance for a full 18 months without service. When service is needed, components can be accessed from grade for added convenience. 800-667-9326; [www.norweco.com](http://www.norweco.com)

## Doosan -7 Series mini excavators

Doosan Infracore North America next-generation -7 Series mini-excavators are equipped with a family of products, including Doosan engines and diagnostics. The first four excavator models include the zero-tail-swing DX27Z-7, DX35Z-7 and DX50Z-7, as well as the reduced-tail-swing DX55R-7. The new DX27Z-7 expands the Doosan mini-excavator lineup with a model for those who need a smaller machine. Integrated into the excavator design, additional counterweight enhances the excavator’s structural durability while enabling offset digging without repositioning the machine. Lift-over-side capacity is also enhanced because of the integrated counterweight design. A swing-open tailgate and side-access hood provide easy access to the excavator’s engine and pump package, valve bank, cooling system and hydraulic system. 770-831-2200; [www.doosanequipment.com](http://www.doosanequipment.com)



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## Blackwater Alert septic alert system

Blackwater Alert launched its new e-commerce website, allowing plumbers, home and business owners to directly order its sewer and septic backup alert system. The Blackwater Alert is a 95-decibel alarm that notifies a property owner that a backup is occurring. The wireless system provides both an audible alert and can be programmed with a smartphone. It can be purchased with a release port valve enabling plumbers to clean out the backup without a mess. Based out of Bridgewater Corners, Vermont, Blackwater Alert was first designed and manufactured in 2016. 215-932-5508; [www.blackwateralert.com](http://www.blackwateralert.com)

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Hugh Scott, P.E., Shea Concrete Products  
Oct. 27 Noon - 2:00 p.m. ET



**Hugh C. Scott IV, P.E.**  
Graduate of the University of New Hampshire's Civil Engineering program with over 15 years of field-based technical and management experience in the engineering, precast concrete and construction industries.

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