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New septic system has sewage geeks jacked

BY SUSAN DEMAR LAFFERTY slafferty@southtownstar.com

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The freshly excavated land next to the industrial building in New Lenox was about to make some sewage history as the scene of an installation of a new aerobic treatment unit.

Folks don't usually get excited about such systems — which, after all are one of life's most basic necessities — but Terry Pedigo knew he was the first in Will County and second in Illinois to install a BioBarrier membrane bioreactor.

"It's the way of the future," he said.

Pedigo's father, David, who owns the six-unit building in the 12500 block of Old Plank Road, had ongoing problems with his mechanical septic system and didn't have space for a traditional system. When the Pedigos learned of the BioBarrier unit, they decided to try it and "be ahead of the curve," Terry Pedigo said. "This is cutting-edge technology."

What makes this system so special is that it releases water so clean it can be recycled and reused. "Eewwwww!" might be an appropriate reaction — until one realizes how clean it can be.

Illinois allows 240 coliform organisms per 100 millimeters, and this system results in 2 per 100 millimeters, according to National Sanitation Foundation testing, said Kurt Bihler, of Joliet-based Bihler Tech Inc., distributor of the BioBarrier.

"Water comes out looking crystal clear and is approved for non-potable uses. Sewage treatment plants do not clean it as good as this," he said. "I've been involved in wastewater for many years, but this is fun. For the first time, there is something positive."



Taylor Layne, of Manteno, installs the pipes that will send clean water from the new wastewater system into a storm drain behind the industrial condominium building in New Lenox. | Susan DeMar Lafferty/Sun-Times Media



Ray Tebo (right) explains how the new BioBarrier membrane bioreactor will work to Terry Pedigo. | Susan DeMar Lafferty/Sun-Times Media



Ray Tebo, of New Excavating Technology, explains how a control panel will tell him exactly how the new BioBarrier membrane bioreactor is working. | Susan DeMar Lafferty/Sun-Times Media



An inside peek at the membrane bioreactor, a system of membranes with micro-sized pores, manufactured by Bio Microbics. | Susan DeMar Lafferty/Sun-Times Media



Ray Tebo, of New Excavating Technologies, installs Will County's first BioBarrier membrane bioreactor wastewater system in the Old Plank Industrial park in New Lenox. | Susan DeMar Lafferty/Sun-Times Media

Pedigo won't be reusing his water (which requires additional equipment), but he's pleased that the water pumped from his new system into the storm drain will be almost perfectly clean.

"People will be interested in seeing how this works," he said.

The system features a turbine-driven blower motor that is encased atop the ground and blows air up and under the buried bioreactor — a unit with an ultra filtration system that keeps out solids, stores them in an underground tank and produces clean, reusable water. It uses no chemicals or disinfectants.

While Illinois has approved the BioBarrier system for aerobic treatment of sewage, the state is still working on first-ever standards for recycling wastewater.

The technology has been around for years and is commonly used in desert climates as well as on Navy ships and cruise ships, said Ray Tebo, of New Excavating Technology, who installed Pedigo's system. He said the former sewage water can be used for car washes, pond aeration, garden fountains, lawn irrigation, toilets and livestock washing.

"To be able to use it on anything will be great. There are so many neat things you can do with recycled water. It seems like every day we are coming up with new uses. Everything is becoming more green," Tebo said.

Another big benefit of this system is that it takes up much less land than traditional septic systems, allowing more homes or larger homes to be built, Tebo said, adding that "getting rid of sewage is a whole different ballgame now."



Terry Pedigo looks over his New Lenox property where a new wastewater system is being installed — the first of its kind in Will County. | Susan DeMar Lafferty/Sun-Times Media