



30 Million American Households Rely On Septic Systems

Very few people understand how their septic system works. We want to change that.

Ignorance is bliss means *"if you don't know about something, you don't worry about it."*

Ignorance ends up being very costly because real problems result in unwanted consequences.

On the other hand, an American Express Research Study concluded, "informed consumers make sensible decisions by gaining an insight about a product prior to its purchase. This insight equips the consumer with the data to arrive at an evidence based conclusion."

Septic systems come with a list of things 'not to do'.

People are expected to adapt their lifestyle to accommodate their septic system.

When a septic system fails prematurely, it is assumed the homeowner was responsible.

More often than not, the failure could have been prevented by utilizing better technology.

Apple cofounder Steve Jobs said, *"A lot of times people don't know what they want until you show it to them. Our job is to show them what they need before they know they want it."*

Jobs was referring to Apple products; he could have been referring to septic systems.

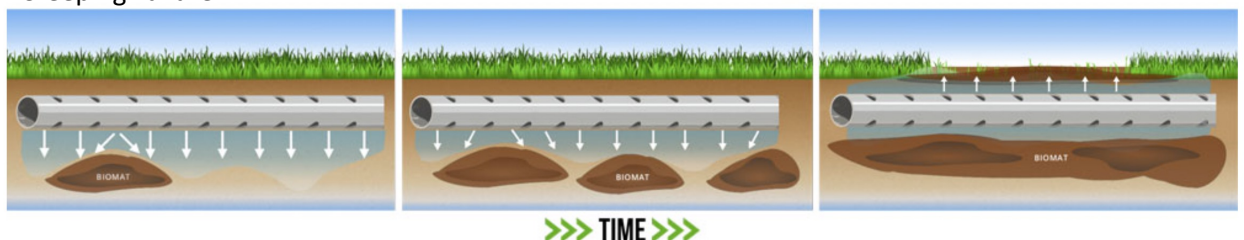
Septic systems failure is caused by a series of chain reactions

1. The ground becomes saturated when it receives more water than the soil can absorb in a relatively short amount of time.
2. Saturated ground causes the soil to become oxygen-starved.
3. Saturated, oxygen-starved soil produces microscopic anaerobic bacteria, which do not require oxygen to reproduce and multiply.
4. The bacteria form a blackish, slimy layer of biological waste called 'biomat' that covers the surface and sides of the drainfield.
5. As long as the household continues to use water, the ground will remain saturated and the biomat will increase and cover a larger portion of the leachfield.

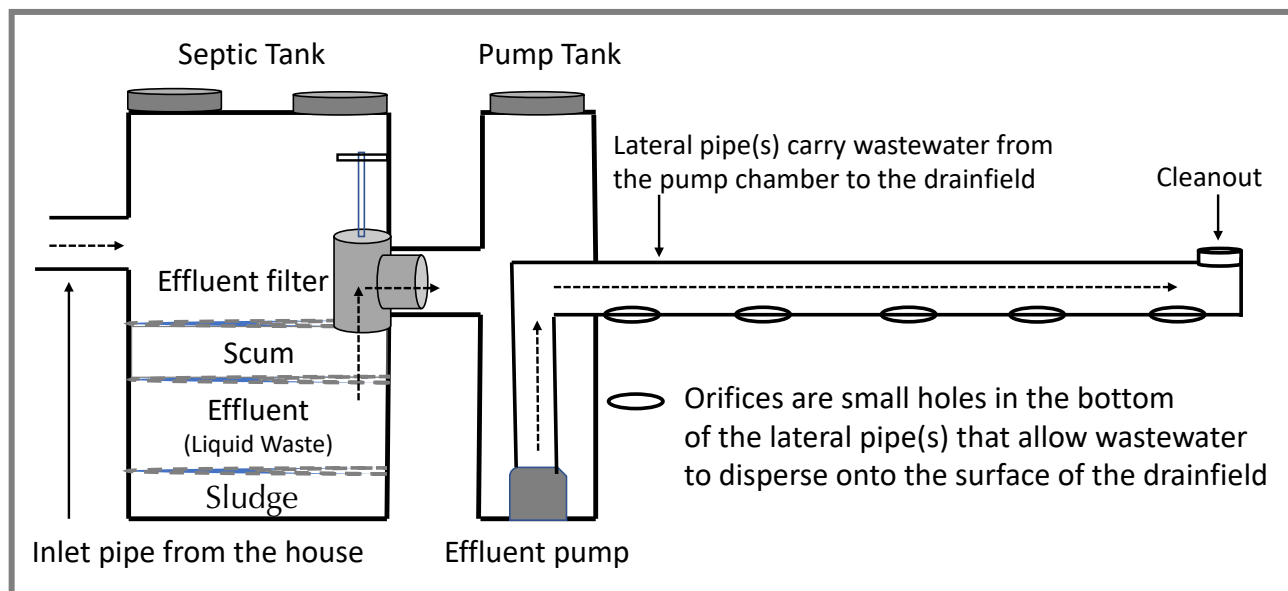
Eventually, the entire field will become covered causing wastewater to surface above ground and/or backup into the house. This is commonly referred to as 'creeping failure'.



Creeping Failure



Pressurized Septic Systems provide solutions in situations where a conventional gravity system will not work. When they work, they are wonderful. When they don't work... not so much.



Pressurized septic systems utilize a pump to transfer wastewater to the drainfield

- Wastewater flows from the septic tank into the pump chamber.
- When the wastewater rises to a certain level, the pump turns ON
- When the level drops to a certain point, the pump turns OFF.

In theory, pressurized systems utilize the entire drainfield each time the pump runs. In reality, they do not utilize the entire drainfield because wastewater does not disperse far enough away from the point of contact to cover the entire width from side to side.

A common cause of premature system failure is due to biomat buildup at the interface of the orifices and the surface area directly below them. When failed mounds are uncovered, the center of the mound is saturated while the sides are completely dry.

The type and size of residential septic systems is based on soil type and number of bedrooms. Certified Soil Testers determine soil type. Number of bedrooms determines how much water will be used on a daily basis.

More often than not, the amount of water used over 24 hours is not as critical as the amount of water used in a short amount of time.

Sara Hager PhD is an engineer, researcher and instructor in the Onsite Sewage Treatment Program in the Water Resources Center at the University of Minnesota. She presents at many local and national training events regarding the design, installation, and management of septic systems and related research.

Ms. Hager is education chair of the Minnesota Onsite Wastewater Association and National Onsite Wastewater Recycling Association and serves on the National Sanitation Foundation (NSF) International Committee on wastewater treatment systems.

Ms. Hager wrote an article published in Onsite Installer Magazine on April 16, 2020. The title of the article was **Top 10 Reasons the Effluent Filter Plugged.**

She wrote "Large volumes of wastewater generated in a short period of time can result in turbulence in the septic tank and reduced retention time, which can lead to solids plugging the effluent screen. Leaks and large parties are examples of such uses."

She advises contractors to tell homeowners "Not to do all the laundry in one day. Spread wash loads throughout the week and wash at times when there is not a lot of water being used in the home. Do not run multiple water devices at the same time, such as showering and/or running the dishwasher while doing the laundry."

In Wisconsin, The Department of Safety and Professional Services (DSPS) requires installing an effluent filter in all new septic systems. The purpose of the filter is to prevent solid waste from leaving the septic tank and migrating to the drainfield.

When an effluent filter completely plugs, it creates serious issues

- A plugged filter does not allow wastewater to pass through the septic tank into the pump chamber. As a result, wastewater backs up until it reaches the top of the septic tank. When the tank is full, the wastewater enters the inlet pump coming from the house. When it reaches the house, it surfaces in basement floor drains, toilets, and showers.
- The second problem occurs when the plugged filter is pulled out of the septic tank to be cleaned. The backed up wastewater along with scum and sludge floating on top of the water surges through the septic tank outlet into the pump chamber.
- The excess wastewater in the pump chamber causes the pump to run much longer than normal. The excess water causes the drainfield to become severely saturated. When the pump stops, the solid waste that entered the drainfield settles to the bottom of the lateral pipe(s) causing orifices to plug.
- Plugged orifices cause permanent uneven wastewater dispersal accelerating biomat buildup. This situation does not provide any warning until it is too late to do anything about it.

All the problems created by the effluent filter can be solved by installing a pressure filter.

- A pressure filter is installed on the discharge port of the pump, which means It is not affected by using large amounts of water in a short period of time.
- It eliminates any possibility of wastewater backing up in the septic tank and into the house.
- It eliminates any possibility of solid waste migrating from the pump chamber to the drainfield.

Sara Hager also wrote an article for Onsite Installer Magazine in the Dec. 2018 edition titled **Benefits of Timed Dosing and Flow Equalization.** This advancement allows you to use large amounts of water in a short period of time without compromising your septic system.

"Utilizing timed dosing instead of demand dosing mitigates variations or peaks in wastewater flow. Peak flows from the dwelling are stored and then dosed to subsequent components evenly throughout the day. Timed dosing configurations are more commonly found in systems that include advanced pretreatment devices or flow equalization."



GeoMat Leaching System

GeoMat is a unique septic drainfield system

- It utilizes the entire drainfield from end-to-end and side-to-side every time it doses.
- It combines shallow burial depth with even dispersal to achieve maximum oxygen transfer.
- Reduced dose size combined with 12" of C33 sand allows water to travel quickly through the sand into the ground allowing soil time to dry. (Anaerobic bacteria cannot exist in dry, well aerated soil.)

Independent Authentication

Even dispersement and 12" of sand lowers BOD and TSS levels to achieve aerobic treatment standards (<30 Mg/L) and TSS (<30 Mg/L). These numbers were proven in stringent National Sanitation Foundation testing. (<https://www.nsf.org/>)

GeoMat is manufactured by Geomatrix Systems located in Old Saybrook, CT.

Geomatrix is owned and managed by Dave & Elizabeth Potts.

Dave Potts has written "Peer Reviewed Journal Articles" required to go through an evaluation process journal editors and other expert scholars assess the quality and scientific merit on the article and its research. (<https://www.geomatrixsystems.com/>)

Wisconsin History

GeoMat was introduced in Wisconsin in 2017 by New Septic Solutions.

Over 3,500 systems have been installed in Wisconsin with ZERO failures.

New Septic Solutions (<https://www.newsepticssolutions.com/>)

- The company is co-owned and managed by Bob Berceau and Tom Donahoe.
- Bob has over 30 years experience as a Certified Soil Tester and licensed septic system designer.
- Tom has over 30 years experience marketing wastewater treatment products in Wisconsin.
- NSS markets wastewater treatment products to septic system contractors dedicated to providing consumers with products designed to adapt to individual lifestyles and requirements.

NEW SEPTIC SOLUTIONS

Prevents overloading

Utilizes the entire drainfield

Prevents lateral orifices from clogging

Reduces contaminants to high treatment levels

Allows doing multiple loads of laundry at one time

Allows using large amounts of water in a short amount of time

PRODUCT NAME

Alderon Control Panel

GeoMat Leaching System

ClearFlow Pressure Filter

GeoMat Leaching System

GeoMat, Alderon, ClearFlow

GeoMat, Alderon, ClearFlow

