

## Environmental Impacts of Failing Septic Systems

A failed septic system is not just a costly mess. Serious environmental health issues can result from poorly maintained systems, including bacterial contaminations in wells, groundwater and surface water.

Wastewater is high in nutrients such as nitrogen and phosphorus, which contribute to plant growth. As a result, sewage in surface water can lead to excessive algae growth in surface waters and contribute to algae blooms and unwanted aquatic plant life.

## Septic System Additives

Research completed by the Environmental Protection Agency has found no significant benefits from adding chemicals to septic systems. Biological additives have not shown to increase biological production and decomposition, as human waste contains enough bacteria to perform this task.

Many times, these additives add harmful chemicals into the system which can in turn be leached out into the drainfield. Properly sighting and scaling of septic systems, along with continued maintenance including pumping every 3-5 years is the best method of keeping a septic system efficient and operational.

## Home Septic System Inspection Checklist

When was the tank installed?

Date: \_\_\_\_\_

When was the tank last pumped?

Date: \_\_\_\_\_

Are there visible leaks?

Yes No

Is there a strong odor near tank?

Yes No

Are there any wet or swampy areas near the tank?

Yes No

Where is the liquid level in the tank?

Base of Outlet Above Below

Is the pump tank free of solids?

Yes No

Is the pump tank free of corrosion & damage?

Yes No

*Depending on your answers to the above questions, or if the level of liquid in your septic tank is too high, it may be time to have a professional inspect or pump your septic system to avoid any septic system failures.*

For more information, please visit:

[www.cceonondaga.org](http://www.cceonondaga.org)

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# Homeowners Guide to Septic System Management

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## How Septic Systems Work

A home septic system is designed to store, distribute and treat solid and liquid waste from the home with an on-site wastewater treatment system. Properly designed and located septic systems maintain water quality by preventing contamination in wells, streams, lakes and groundwater.

In a basic septic system, household wastewater flows from drains from the dwelling and into the **septic tank**. Here, bacteria decompose some of the waste material while light waste (oil, grease) float to the top and form a layer of **scum**, as the heavier wastes settle to the bottom of the tank forming a **sludge**. Partially treated wastewater in between the light and heavy layers is then distributed through the exit pipe and again through a **distribution box**, which then routes the wastewater into the absorption area, commonly referred to as a **leachfield** or **drainfield**. Through filtration via sand and gravel, chemical reactions and decomposition by microbes in the soil, the remaining wastewater is treated again, recycling water back into the soil.

## Why Septic Systems Fail

Most, if not all septic systems will eventually fail, as their life spans rarely exceed 20-30 years. Pipes can be blocked by roots and crushed by heavy traffic over the drainfield. Improper installations in areas with a high water table can oversaturate the soil with organic material and clog the system. While age and other unforeseen issues can make a system unusable, the number one cause of septic system failure is poor maintenance by the homeowner. Pumping on a regular basis (generally every 3-5 years) is needed for septic system functionality, as pumping resets the system, removing solids from the tank and prevents solids from clogging the absorption field and damaging the system beyond repair. The key to preventing septic system failure is proper design and siting, maintenance and regular pumping.

## Septic System Components

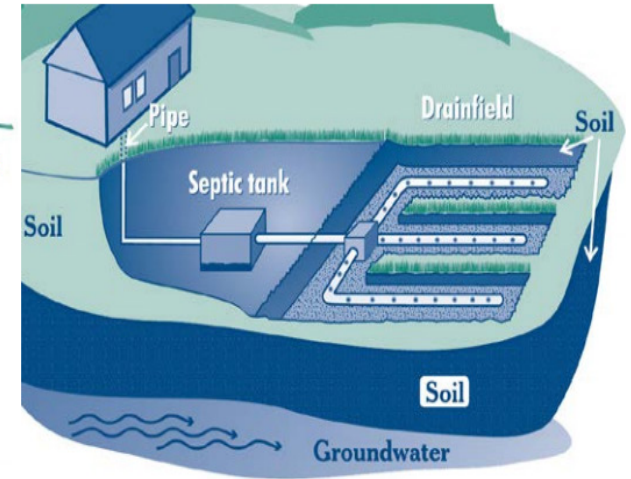
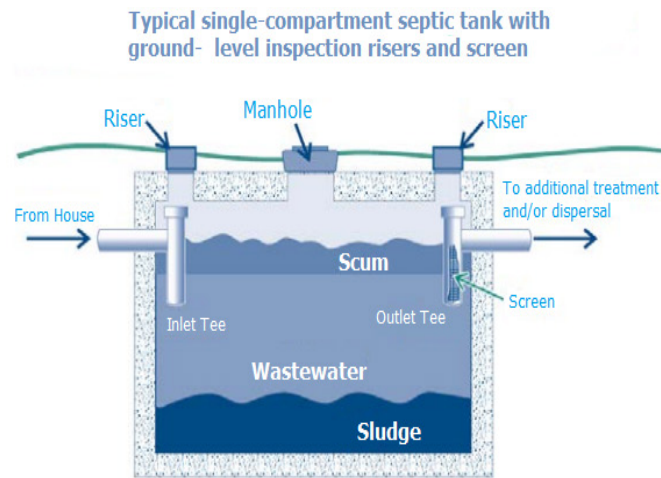


Image from US EPA (Homeowner's Guide to Septic Systems, 2005)

**House Drain Pipe** Water and waste material is distributed from fixtures, within the home and distributed to the septic tank.

**Septic Tank** The septic tank collects discharges from the household, allowing heavy solids to sink and lighter solids to float and eventually be broken down by bacteria, forming a scum at the top and a sludge at the bottom of the tank. Partially treated wastewater enters the drain field from here.

**Distribution Box** Partially treated wastewater leaves the septic tank and enters a distribution box which is then routed evenly throughout the drainfield.

**Drainfield** A system of trenches with distribution pipes allows wastewater to be treated biologically by microbes in the soil. Trenches must be evenly sized and distributed properly as to not overload the system at any specific point.