What Should Not Be Disposed of, and Why?

- Do not deposit coffee grounds, cooking fats, wet-strength paper towels, disposable diapers, facial tissues, cigarette butts or similar materials that do not easily decompose.
- Do not dump grease down the drain. It can build up in the tank and plug the inlet. Keep a separate container for waste grease and throw it out with the trash.
- Ground garbage can find its way out of the septic tank and clog the soil treatment system. If you must use a garbage disposal, you may need to remove the septic tank solids every year or even more often. It is better to compost garbage or dispose of it properly.
- Compounds that are supposed to make the cleaning of septic tanks unnecessary should not be added. They may actually harm the system by causing sludge and scum to be flushed into the drainfield.

What Are the Effects of Inadequate Systems?

Though septic systems provide a good method of on-site waste disposal for nearly one-third of the nation's population, if they are poorly sited, constructed or maintained they can constitute a serious threat to groundwater—the source of drinking water for half of all Americans. Inadequate septic systems can also pollute lakes and streams, limiting their use for recreation, detracting from their beauty, and lowering nearby property values.

Despite efforts to regulate their placement and use, septic systems represent the largest reported cause of groundwater contamination resulting in disease outbreaks in the United States. Bacteria and viruses found in household wastewater are the principal identified causes of water-related illnesses such as acute gastrointestinal illness and hepatitis A.

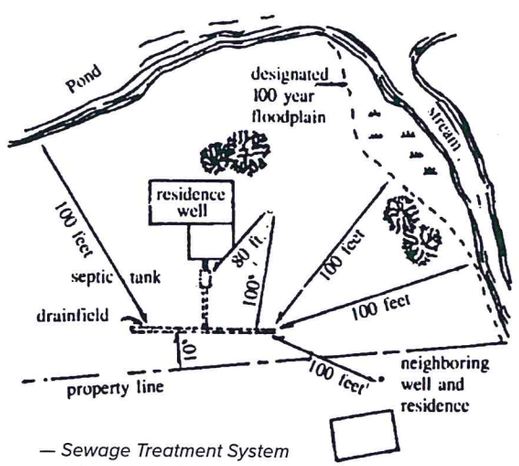
"A poorly functioning septic system is a threat to the water quality of nearby lakes and streams".

Improper use of septic systems has been shown to contribute to the contamination of groundwater by toxic chemicals, nitrates and heavy metals.

Excess nutrients, like nitrogen and phosphorus, can leach from drainfields that are overloaded or installed in soil that allows the wastewater to pass through too rapidly. These nutrients can adversely affect the water quality of area lakes and streams by causing excessive growth of unwanted algae.

What Is the Role of Land Use Controls?

In addition to adopting strict, uniform sanitary codes, many units of government are reducing the likelihood of septic system failure by instituting zoning restrictions and land use controls. The most frequently used zoning control establishes a minimum lot size for residences. Several states require that each home using a septic system have at least a half-acre lot. Other areas impose even larger minimum lot sizes, sometimes up to five acres, depending on local conditions. By restricting the number of septic systems in a given area, the community is able to limit the total quantity of effluent and to prevent it from entering the groundwater and area lakes and streams.



— Sewage Treatment System Setback Distances —

Why Is Community Action Needed?

Septic system management is a community issue. Homeowners and local officials need to understand enough about on-site wastewater management to assess their own problems and needs. Then, working together with developers, public health officials, sanitation experts, land-use planners and septic system professionals, they can develop management plans that will work to protect all of them—and their water resources—from contamination by poorly installed and maintained septic systems.

In areas of high-density housing or where conventional septic systems cannot be effective, the use of centralized sewage treatment plants assures the greatest protection of water quality and public health.

Septic systems are an important part of community waste management. A well-designed, properly installed and carefully maintained septic system can provide effective treatment of domestic wastewater.

An uninformed homeowner may unwittingly be contributing to the damage done to our environment by generations of haphazard septic system management. Be part of the solution by being informed and getting involved. It's the surest way to protect your family, your property and your environment.

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Understanding Your Septic System

Office of Health Services
Environmental Division
Water Pollution Program
13-15 Kennedy Boulevard
East Brunswick, NJ 08816
732-745-8480

Congratulations! You have just acquired that country lot about which you have always dreamed. Ahhhhh, just think of it—fresh air, green fields, quiet nights, septic tanks.....septic tanks?

Though we all knew as children that the farmer in the dell had a well, the truth of the matter is that nobody ever told us that he also had to have some way of disposing of his wastewater. Modern farmers and rural and suburban homeowners have pipes instead of buckets to get the water from the well to the house. They also have septic systems right on their property for disposing of wastewater.

What Is a Septic System?

Wherever running water is supplied to a house or other structure, there must be a sanitary way to remove the used water.

Where public or central sewage treatment works are not provided, sewage treatment becomes a do-it-yourself operation for the homeowner, who must give careful consideration to collecting, removing, treating and disposing of sewage right on the property where it originates. In other words: an "on-site" septic system.

The most common system of "on-site" sewage treatment and disposal for a private home in a rural or suburban area consists of a septic tank, which provides a place for large solids to settle and to be decomposed by microorganisms, and a drainfield where fine solids are removed and accompanying bacteria are destroyed.

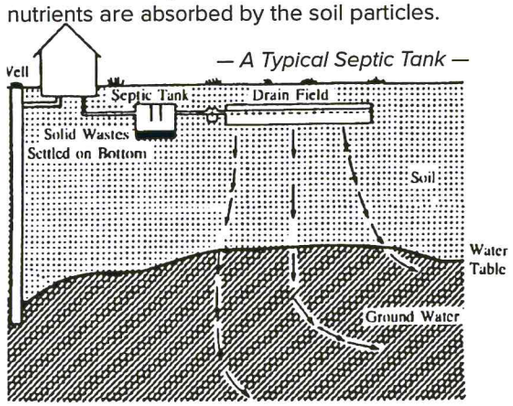
How Does a Septic Tank Work?

A septic tank is a storage tank where sewage is digested by bacteria. There are three levels in the tank: sludge, liquid and scum. Sludge, the bottom layer, consists of undigestible matter and heavy solids that will not float. The top layer is a scum that contains grease and lightweight solids that float. In between the sludge and the scum is the critically active liquid layer that contains water and dissolved materials, such as sugar, detergent and small amounts of suspended solids.

Solids and scum are digested or decomposed in the tank by bacteria that are active in the absence of oxygen (anaerobic bacteria). This process turns up to 50 percent of the solids and scum into liquid and gas. The liquid is carried out into the drainfield, and undigestible solids remain in the tank as sludge.

How Does the Drainfield Work?

Each time raw sewage enters the septic tank, an equal amount of fluid is forced out of the tank. The fluid leaving the tank is called effluent. This effluent may still contain disease organisms. Small amounts of solid matter remaining in the effluent may also move out of the tank to the drainfield. In the drainfield, the effluent trickles into the soil, where further digestion is carried on by bacteria, and nutrients are absorbed by the soil particles.



Why Do We Need to Understand Septic Systems?

Because septic systems are hidden underground and do not require daily maintenance, most homeowners rarely think about them. Most people. who rely on a septic system to treat household wastewater also rely on groundwater, tapped by a well, to meet their drinking and household needs. The well and the septic system are usually located on the same property. This is important because, if the septic system and well are not properly designed, located and maintained, the groundwater that supplies the well may become contaminated. A poorly functioning septic system is also a threat to the water quality of nearby lakes and streams.

Why Are Proper Siting and Design So Important?

Septic systems are regulated by states and local governments. All septic systems require approval and permits before installation to protect the health of the people who use the system as well as the health of their neighbors. There are a few rules of thumb by which we can generally tell when a septic system is, likely to function properly:

- Good soil makes a good system. The right soil will facilitate treatment and disposal of septic system wastewater; for example, soils that combine sand, silt and clay work well. If there is too much clay in the soil, the wastewater may not move through it. On the other hand, if the soil contains too much sand and too many large particles, wastewater may pass through it too rapidly and reach the groundwater, lakes and streams untreated.
- Waste treatment in the soil occurs more readily above the water table where the soil is relatively dry and contains plenty of oxygen.
- Septic systems need enough space to do their jobs well. Not all microorganisms and chemicals are removed from wastewater as it travels through the soil. Even a properly operating system will occasionally discharge nutrients (phosphates and nitrates) and some bacteria or viruses to surface water and groundwater. To avoid heavy loading of surface water and groundwater with septic system effluent, systems should be installed on lots that provide enough space for adequate drainfields.
- Proper design and use are essential for good treatment. Each septic system is designed to treat and dispose of a specific volume and type of wastewater under the conditions found at the site. The system must not be overloaded by disposing of a greater volume or different type of wastewater than it was designed to handle. Hazardous chemicals or grease should not be disposed of in septic systems. Proper use and management and the use of phosphate-free detergents will help prevent overloading and extend the life of the system.

"With ordinary use and care, a septic tank usually requires pumping every three to five years."

What Maintenance is Necessary?

Routine maintenance is critical to prevent septic system failure. Over time, sludge and scum accumulate in the tank and eventually will pass through and clog the drainfield. The tank should be inspected at least once every year to determine the accumulation rate of scum and sludge. With ordinary use and care, a septic tank usually requires pumping every three to five years. The number of people using the system, the amount of waste generated and the size and design of the system will determine how often the tank will have to be pumped.

Proper maintenance of the septic tank will definitely increase the life of the system; but, unfortunately, all septic systems eventually fail.

What Are Some Tips For Safe Disposal?

- Normal amounts of detergent, bleach, drain cleaner, toilet bowl deodorizer and other house hold chemicals won't harm the bacterial action in the septic tank.
- Discharge all sewage wastes from the home into the septic tank. Do not run laundry wastes directly into the drainfield.
- Use phosphate-free detergent to prolong the useful life of the septic system.
- Use good quality toilet paper that breaks up easily when wet.
- Wash only full loads of laundry and spread the washing out during the week to avoid overloading the septic system.
- It is not necessary to begin bacterial action by adding a "starter" to your septic tank.