SEPTIC SYSTEM

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Contents

Septic Information for Homeowners

Septic systems are being used in 25% of all U.S. homes. Poorly managed systems have been named as a concern by nearly every federal and state program that deals with water resource issues. According to various reports and studies, an estimated 10% to 20% of septic systems fail each year.

Septic systems treat and disperse relatively small volumes of wastewater from individual or small numbers of homes and commercial buildings. Septic system regulation is usually a state, tribal, and local responsibility. EPA provides information to homeowners and assistance to state and local governments to improve the management of septic systems to prevent failures that could harm human health and water quality.

Some septic systems are regulated by EPA if they receive industrial or commercial wastes and/or they have the capacity to serve 20 or more people. More information about septic systems regulated by EPA. If your septic tank failed, or you know someone who did, you are not alone. As a homeowner, you are responsible for maintaining your septic system. Proper septic system maintenance will help keep your system from failing and will help maintain your investment in your home. Failing septic systems can contaminate the ground water that you or your neighbors drink and can pollute nearby rivers, lakes and coastal waters.

Here are ten simple steps you can take to keep your septic system working properly.

- Locate your septic tank and drainfield. Keep a drawing of these locations in your records.
- Have your septic system inspected at least every three years.
- Pump your septic tank as needed (generally every three to five years).
- Don't dispose of household hazardous wastes in sinks or toilets.
- Keep other household items, such as dental floss, feminine hygiene products, condoms, diapers, and cat litter out of your system.
- Use water efficiently.
- Plant only grass over and near your septic system. Roots from nearby trees or shrubs might clog and damage the system. Also, do not apply manure or fertilizers over the drainfield.
- Keep vehicles and livestock off your septic system. The weight can damage the pipes and tank, and your system may not drain properly under compacted soil.
- Keep gutters and basement sump pumps from draining into or near your septic system.
- Check with your local health department before using additives. Commercial septic tank additives do not eliminate the need for periodic pumping and can be harmful to your system.

Septic Systems Operation and Maintenance Home Owners Guide

Septic Systems Frequently Asked Questions

What are septic systems?

Septic systems are used to treat and dispose of relatively small volumes of wastewater, usually from houses and businesses that are located relatively close together. Septic systems are also called onsite wastewater treatment systems, decentralized wastewater treatment systems, ON lot systems, individual sewage disposal systems, CLUSTER systems, PACKAGE plants, AND PRIVATE sewage systems.

Why are these systems called "decentralized"?

Because septic systems do not involve central wastewater collection and treatment, they are considered decentralized.

How do septic systems work?

The typical septic treatment system includes a septic tank, which digests organic matter and separates floatable matter (e.g., oils and grease) and settleable solids from the wastewater. Soil based systems discharge the liquid (effluent) from the septic tank into a series of perforated pipes buried in a leach field, leaching chambers, or other special units designed to slowly release the effluent into the soil or surface water.

Alternative systems USE pumps OR gravity TO help septic tank effluent trickle through sand, organic matter (e.g., peat, sawdust), constructed wetlands, OR other media TO remove OR neutralize pollutants LIKE disease causing pathogens, nitrogen, phosphorus, AND other contaminants. SOME alternative systems are designed TO evaporate wastewater OR disinfect it beefore it IS discharged TO the soil OR surface waters.

Why do septic systems fail?

Most septic system failures are related to inappropriate design and poor maintenance. Some soil based systems (with a leach or drain field) have been installed at sites with inadequate or inappropriate soils, excessive slopes or high ground water tables. These conditions can cause hydraulic failures and water resource contamination. Failure to perform routine maintenance, such as pumping the septic tank at least every 3 to 5 years, can cause solids in the tank to migrate into the drain field and clog the system.

What items should not be put down the drain if my house has a septic system?

Do not put the following items into sink drains or toilets: hair combings, coffee grounds, dental floss, disposable diapers, kitty litter, feminine hygiene products, cigarette butts, condoms, gauze bandages, fat, grease, oil, paper towels, paints, varnishes, thinners, waste oils, photographic solutions or pesticides.

What should I do if my basement floods?

If sewage from your plumbing fixtures or onsite system backs up into your basement, avoid contact with the sewage and the possibly harmful pathogens it might contain. Contact your local health department or regulatory agency. Cleanup personnel should wear protective clothing (e.g.,

long rubber gloves, face splash shields). After cleanup is complete, all equipment, tools, and clothing used in the cleanup and the flooded basement area should be washed thoroughly and disinfected with a mixture of 90 percent water and 10 percent household bleach. The area should be dried out with fans, heat lamps, or other devices and not be used until it has been completely dry for at least 24 hours.

Who do I contact if I'm having a problem with my septic system?

Contact your local health department or regulatory agency. You can find the telephone NUMBER FOR your LOCAL health department IN your LOCAL phone DIRECTORY. IF your SYSTEM needs TO be serviced, CONTACT a septic systems service provider OR the **National Association OF Wastewater Transporters**

Who do I contact for information on septic systems?

The National Small Flows Clearinghouse has a Technical Assistance Hotline that can be accessed toll free AT (800) 624 8301 OR (304) 293 4191. You can also CONTACT the **Cooperative Extension Service Office** nearest your home FOR information.

Are septic systems more prevalent in some areas of the country than in others?

According to the U.S. Census Bureau, about 26 million homes (one fourth of all homes) in America are served by decentralized wastewater treatment systems. The Census Bureau reports that the distribution and density of septic systems vary widely by region and state, from a high of about 55 percent in Vermont to a low of around 10 percent in California. The New England states have the highest proportion of homes served by septic systems: New Hampshire and Maine both report that about one half of all homes are served by individual systems. More than one third of the homes in the southeastern states depend on these systems, including approximately 48 percent in North Carolina and about 40 percent in both Kentucky and South Carolina. More than 60 million people in the nation are served by septic systems. About one third of all new development is served by septic or other decentralized treatment systems.

Do septic systems cause health or water quality problems?

Septic systems that are properly planned, designed, sited, installed, operated and maintained can provide excellent wastewater treatment. However, systems that are sited in densities that exceed the treatment capacity of regional soils and systems that are poorly designed, installed, operated or maintained can cause problems. The most serious documented problems involve contamination of surface waters and ground water with disease causing pathogens and nitrates. Other problems include excessive nitrogen discharges to sensitive coastal waters and phosphorus pollution of inland surface waters, which increases algal growth and lowers dissolved oxygen levels. Contamination of important shellfish beds and swimming beaches by pathogens is also a concern in some coastal regions. EPA has developed Guidelines to assist communities in establishing comprehensive management programs for septic wastewater systems to improve water quality and protect public health.

How are septic systems regulated?

In most states, local health departments issue construction and operating permits to install septic systems under state laws that govern public health protection and abatement of public nuisances. Some states are beginning to add water resource protection provisions to their septic system regulations because of the possible impacts from nitrogen and phosphorus. Under most regulatory programs, the local permitting agency conducts a site assessment to determine whether the soils present can provide adequate treatment, to ensure that ground water resources will not be threatened, and to stipulate appropriate setback distances from buildings, driveways, property lines and surface waters. Some states permit alternative systems if conventional soil based systems are not allowable. Very few permitting agencies conduct regular inspections of septic systems after they are installed.

What can be done to improve septic system management?

EPA is partnering with federal agencies, states, tribes, local governments and nongovernmental organizations TO improve the MANAGEMENT OF septic systems. EPA's Guidelines FOR managing decentralized wastewater treatment systems can be tailored TO meet the needs OF states, counties, tribes, cities, towns, subdivisions AND other areas WHERE septic systems might threaten PUBLIC health OR water resources. The Guidelines focus ON the following areas WHERE better MANAGEMENT can achieve significant improvements IN overall SYSTEM performance:

- Planning TO ensure that SYSTEM densities DO NOT exceed the ability OF regional soils AND water resources TO treat AND assimilate pollutants
- Site evaluations that characterize AND help TO protect soil, ground water, AND surface water resources
- SYSTEM designs that provide predictable performance levels OF treatment that are appropriate FOR protecting PUBLIC health AND the environment
- Operation AND maintenance procedures that ensure that systems are operated properly AND that maintenance tasks (e.g., septic tank pumping, inspection OF treatment units) are performed regularly
- MONITORING AND reporting TO provide usable AND easily accessible records ON SYSTEM inventories, capacity AND performance
- Follow up AND corrective actions TO ensure that failing systems are repaired, upgraded OR replaced BEFORE PUBLIC health OR water resources are adversely affected

What are the Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems?

The Guidelines are presented in the form of five model management programs. Each model program includes the elements and activities needed to achieve certain management objectives. The Guidelines address the sensitivity of the environment in the community and the complexity of the system used. The five model management programs are:

1. SYSTEM Inventory AND Awareness OF Maintenance Needs
2. MANAGEMENT Through Maintenance Contracts

3. MANAGEMENT Through Operating PERMITS
4. Responsible MANAGEMENT Entity (RME) Operation AND Maintenance
5. Responsible MANAGEMENT Entity (RME) Ownership AND MANAGEMENT

EPA developed the Guidelines TO assist communities IN establishing comprehensive MANAGEMENT programs FOR septic wastewater systems TO improve water quality AND protect PUBLIC health. The Guidelines will also help states, tribes AND communities TO develop, MODIFY AND implement laws AND regulations IN the area OF MANAGEMENT planning FOR decentralized wastewater systems.

Are the Guidelines mandatory?

No. The adoption of the Guidelines is voluntary. EPA recognizes that states, tribes and local governments need a flexible framework so they can tailor their programs to the needs of the community. The Guidelines are not intended to supersede existing federal, state, tribal, and local laws and regulations.

Why are the Guidelines needed?

Septic systems serve approximately 25 percent of the U.S. population and about 40 percent of new developments. The U.S. Census Bureau has indicated that at least 10 percent of septic systems have stopped working. Some communities report failure rates as high as 70 percent! State agencies report that these failing systems are the third most common source of ground water contamination. In EPA's 1997 Response to Congress on Use of Decentralized Wastewater Treatment Systems, the Agency determined that with the technology now available, adequately managed decentralized systems can protect public health and the environment as well as provide long term solutions for the nation's wastewater needs. The report also cited five major barriers to increasing the use of decentralized wastewater treatment systems, and one barrier is the lack of adequate management.

Who was involved in developing the Guidelines?

EPA's Office of Wastewater Management developed the voluntary Guidelines in cooperation with staff from the Office of Wetlands, Oceans and Watersheds; the Office of Ground Water and Drinking Water; the Office of Research and Development; EPA regional offices; and the U.S. Department of Agriculture. Significant input was received from numerous stakeholders, state health agencies, environmental groups, and national organizations. See the Partners page for a complete list.

Are there organizations that can assist my community in addressing ON site wastewater problems?

The National Small Flows Clearinghouse has a Technical Assistance Hotline that can be accessed toll free AT (800) 624 8301 OR (304) 293 4191. The Rural Community Assistance Program provides assistance TO communities HAVING problems WITH their septic systems AND can be reached AT (888) 321 7227 OR (202) 408 1273.