Properly Managing Your Septic Tank System

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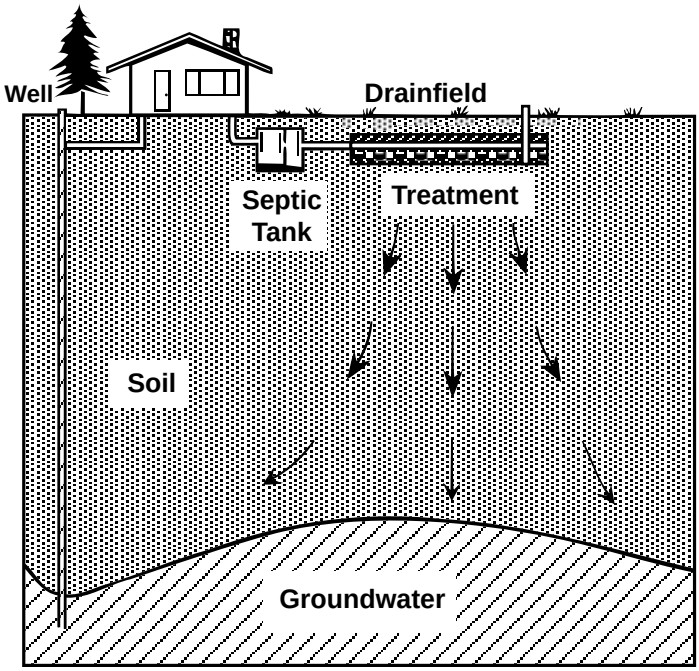
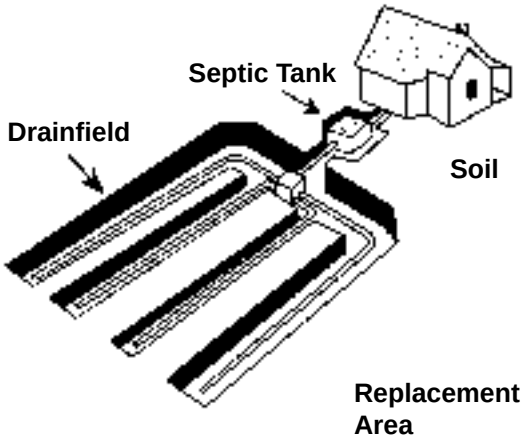


Households that are not served by public sewers usually depend on septic tank systems to treat and dispose of wastewater. A well-designed, installed, and maintained septic system can provide years of reliable low-cost service. When these systems fail to operate effectively, property damage, groundwater and surface water pollution, and disease outbreaks can occur. Therefore, it makes good sense to understand and care for your septic tank system.

There are many different types of septic tank systems to fit a wide range of soil and site conditions. The following information will help you understand a conventional gravity-now septic system and keep it operating safely at the lowest possible cost.

A conventional septic tank system has three working parts:

1. The septic tank.
2. The drainfield with its replacement area.
3. The surrounding soil.



The typical septic tank is a large buried rectangular, or cylindrical container made of concrete, fiberglass or polyethylene. Wastewater from your toilet, bath, kitchen, laundry, etc., flows into the tank. Heavy solids settle to the bottom where bacterial action partially decomposes them to digested sludge and gases. Most of the lighter solids, such as fats and grease, rise to the top and form a scum layer.

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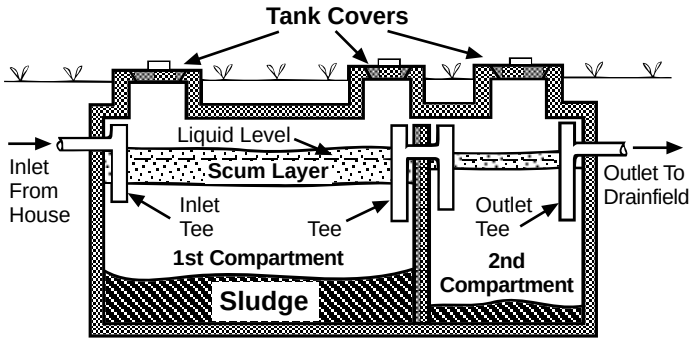
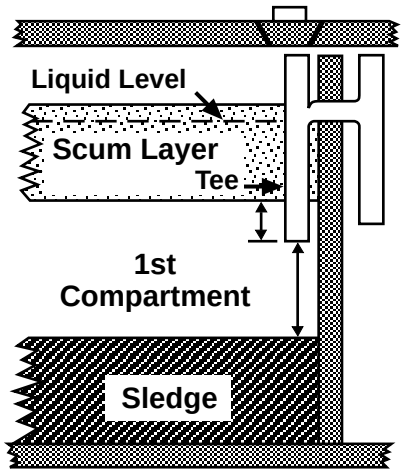


Septic tanks may have one or two compartments. Two-compartment tanks do a better job of settling solids and are required for new systems. Tees or baffles are provided at the tank's inlet and outlet pipes. The inlet tee slows the incoming wastes and reduces disturbance of the settled sludge. The outlet tee keeps the solids or scum in the tank. All tanks should have accessible covers for checking the condition of the baffles and for pumping both compartments. If risers extend from the tank to or above the ground surface, they should be secure to prevent accidental entry into the tank.

Solids that are not decomposed remain in the septic tank. If not removed by periodic pumping, solids will accumulate until they eventually overflow into the drainfield. Most septic tanks need to be pumped every 3 to 5 years, depending on the tank size, and the amount and type of solids entering the tank.



Many products on the market, such as solvents, yeast, bacteria, and enzymes claim to improve septic tank performance, or reduce the need for routine pumping. None of them have been found to work. Some can even cause solids to carry over to the drainfield, which results in early soil clogging and the need for a new drainfield. Products containing organic solvents also contribute to groundwater pollution.

The wastewater leaving the septic tank is a liquid called effluent. It has been partially treated, but still contains disease-causing bacteria and other pollutants. Discharging effluent onto the ground surface or into surface and groundwater is against Washington State law.

The Drainfield

The drainfield receives septic tank effluent. It has a network of perforated pipes laid in gravel-filled trenches (2–3 feet wide), or beds (over 3 feet wide) in the soil. Wastewater trickles out of the pipes, through the gravel layer, and into the soil. The size and type of drainfield depends on the estimated daily wastewater flow and soil conditions.

Every new drainfield is required to have a designated replacement area. It must be maintained should the existing system need an addition or repair.

The Soil

The soil below the drainfield provides the final treatment and disposal of the septic tank effluent. After the effluent has passed into the soil, most of it percolates downward and outward, eventually entering the groundwater. A small percentage is taken up by plants through their roots, or evaporates from the soil.

The soil filters effluent as it passes through the pore spaces. Chemical and biological processes treat the effluent before it reaches groundwater, or a restrictive layer, such as hardpan, bedrock, or clay soils. These processes work best where

the soil is somewhat dry, permeable, and contains plenty of oxygen for several feet below the drainfield.

Warning signs of a failure:

- Odors, surfacing sewage, wet spots or lush vegetation in the drainfield area
- Plumbing or septic tank backups
- Slow-draining fixture
- Gurgling sounds in the plumbing system

If you notice any of these signs or if you suspect your septic tank system may be having problems, contact your local health agency for assistance.

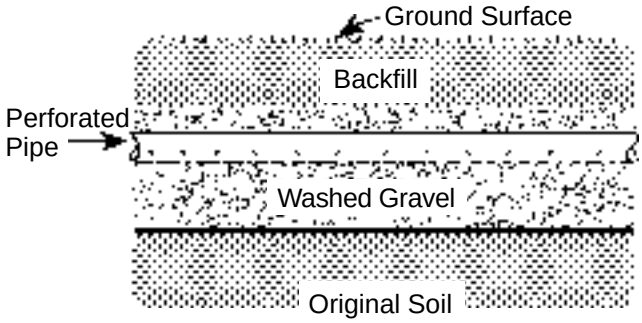
Caring for Your System:

1. Practice water conservation. The more wastewater you produce, the more the soil must treat and dispose of. By reducing and balancing your water use, you can extend the life of the drainfield, decrease the possibility of system failure, and avoid costly repairs.

To reduce your water use:

- Use water-saving devices.
- Repair leaky faucets and plumbing fixtures.
- Reduce toilet reservoir volume or flow.
- Take shorter showers.
- Take baths with a partially filled tub.
- Wash only full loads of dishes and laundry.

2. Keep accurate records. Know where your septic tank system is and keep a diagram of its location. Records of its size and location may be available at your local health agency. It is also wise to keep a record of maintenance on the system. These records will be helpful if problems occur, and will be valuable to the next owner of your home.



3. Inspect your system once each year. Check the sludge and scum levels inside your septic tank to assure that the layers of solids are not within the early warning levels. Also check the tank to see if the baffles and tees are in good condition. Periodically inspect the drainfield and downslope areas for odors, wet spots, or surfacing sewage. If your drain field has inspection pipes, check them to see if there is a liquid level continually over 6 inches. This may be an early indication of a problem.

4. Pump out your septic tank when needed. Don't wait until you have a problem. Routine pumping can prevent failures, such as clogging of the drainfield and sewage back-up into the home. Using a garbage disposal will increase the amount of solids entering the septic tank, requiring more frequent pumping.

5. Never flush harmful materials into the septic tank. Grease, cooking fats, newspapers, paper towels, rags, coffee grounds, sanitary napkins, tampons, and cigarettes cannot easily decompose in the tank. Chemicals such as solvents, oils, paint and pesticides are harmful to the system's proper operation and may pollute the groundwater. Septic tank additives do not improve the performance of the septic tank, nor do they reduce the need for pumping. For information on the proper disposal of hazardous household waste, call the Recycle Hotline, 1-800-RECYCLE.

6. Keep all runoff away from your system. Water from surfaces such as roofs, driveways, or patios should be diverted away from the septic tank and drainfield area. Soil over your system should be slightly mounded to help surface water run off.

7. Protect your system from damage. Keep traffic, such as vehicles, heavy equipment, or livestock off your drain field or replacment area. The pressure can compact the soil or damage pipes. Before you plant a garden, construct a building, or install a pool, check the location of your system and replacement area.

8. Landscape your system properly. Don't place impermeable materials over your drainfield or replacement area. Materials such as concrete or plastic, reduce evaporation and the supply of oxygen to the soil for proper effluent treatment. They can also hinder access to the system for pumping, inspection, or repair. Grass is the best cover for your system.

9. Never enter any septic tank. Poisonous gases or the lack of oxygen can be fatal. Any work on the tank must be done from the outside.

10. Check with your local health agency for help with system problems. Although some malfunctions may require complete drainfield replacement, many problems can be corrected with a minimum amount of cost and effort.

Additional Information

Further information is contained in the following Department of Health publications.
Water Saving Guideline 1, DSHS 22-643 (x) 5/88.
Septic Tank System For Your Home, DSHS 22-45A 11/83.
On-Site Sewage System Regulations, DOH 334-006A WAC 246-272.

These are available from your county health agency or by writing to:

Washington State Department of Health
Office of Community Environmental Health
Mail Stop LD-11 Olympia, WA 98504

Other sources of information include your local:
Health Agency
Natural Resources Conservation Services Office
Cooperative Extension Office

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