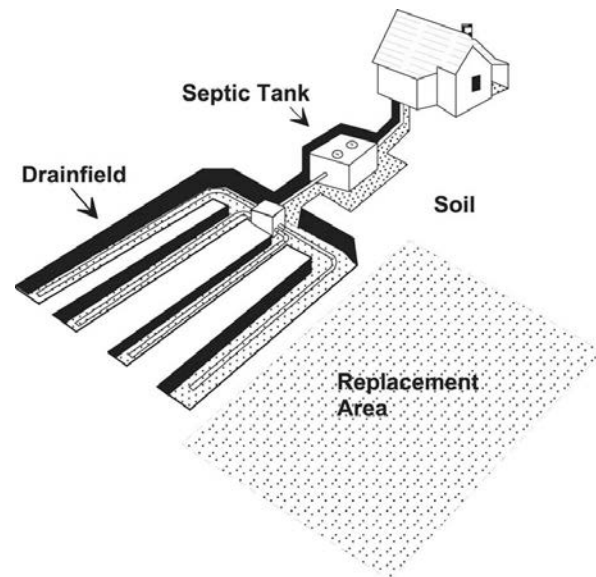


A household that is not served by a public sewer usually depends on a septic system for treatment and dispersal of wastewater. A well-designed, installed, operated and maintained septic system can provide years of reliable low-cost service. When a septic system fails to operate effectively, property damage, groundwater and surface water pollution (including shellfish contamination), and disease outbreaks can occur. Therefore, it makes good sense to understand and care for your septic system.

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

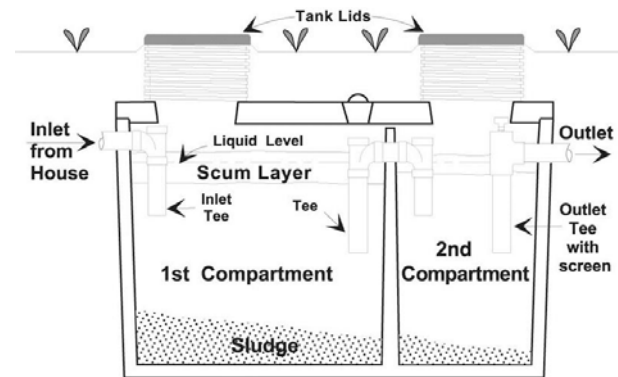
A conventional gravity-flow septic system has three working parts:

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



The Septic Tank

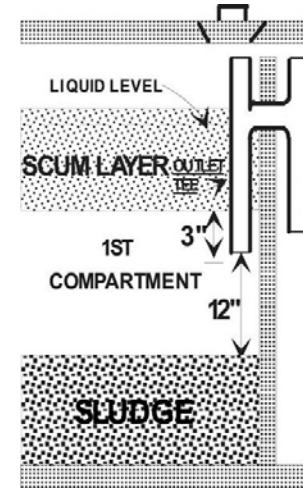
The typical septic tank is a large buried rectangular or cylindrical container made of concrete, fiberglass, or polyethylene. Wastewater from your toilet, bath, kitchen, laundry, etc. flows into the tank. Heavy solids settle to the bottom where bacterial action partially decomposes them to digested sludge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



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 the 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.

"Early Warning" Levels Inside Your Septic Tank



The septic tank should be pumped when:

- the bottom of the scum layer is within 3 inches (7.62 cm) of the bottom of the outlet tee or baffle, or
- the top of the sludge layer is within 12 inches (30.48 cm) of the bottom of the outlet fitting.

Some septic tank additives on the market with chemicals, yeast, bacteria, or enzymes claim to improve septic tank performance or reduce the need for routine pumping. Such products are not necessary for the proper functioning of a septic tank and are not recommended. Some can 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 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's surface or into surface and ground water is against Washington State law.

The Drainfield

The drainfield receives septic tank effluent. It has a network of perforated pipes laid in gravelless or gravel-filled trenches (2-3 feet (.061 – 0.97 m) wide) or beds (up to 10 feet (3.05 m) wide) in the soil. Wastewater trickles out of the pipes, through the gravel layer (when present), and onto the soil on the bottom of the

trench or bed. 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 100% replacement area. It must remain free of encroachment and damage to allow a repair if needed.

The Soil

The soil below the drainfield provides the final treatment and dispersal 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 may be taken up by plants through their roots, or evaporates from the soil.

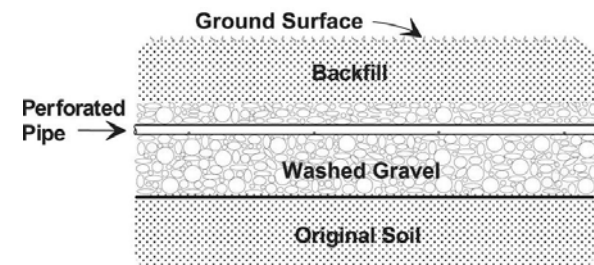
The soil filters effluent as it passes through the pore spaces. Chemical and biological processes treat the effluent before it reaches groundwater, or a restrictive layer, such as hardpan, bedrock, or clay soils. These processes work best where the soil remains unsaturated, is well-drained and contains plenty of oxygen for several feet below the drainfield.

System Failure

Warning signs of a failure:

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

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



Caring For Your System – The Ten Essentials

1. **Practice water conservation.** The more wastewater you produce, the more wastewater the soil must treat and dispose. By reducing and balancing your 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 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 a 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 or tees are in good condition. Periodically inspect the drainfield and downslope areas for odors, wet spots, or surfacing sewage. If your drainfield has inspection pipes, check them to see if there is liquid level continually over 6 inches (15.24 cm). 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. Use of a garbage

disposal (not recommended) 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 oils, newspaper, paper towels, rags, coffee grounds, feminine hygiene products, diapers, flushable wipes 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 are not recommended and are not necessary for the proper functioning of a septic tank, nor do they reduce the need for routine 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 runoff.

7. **Protect your system from damage.** Keep traffic such as vehicles, heavy equipment, or livestock off your drainfield or replacement area. The pressure can compact the soil or damage pipes. Before you plant a garden, construct a building, or install a pool, check on 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 air to the soil for proper effluent treatment. They can also hinder getting 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 air can be fatal. Any work to the tank should 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 is available from the Washington State Department of Health at: www.doh.wa.gov/septic

More wastewater publications are available from your local health agency or by writing to: Washington State Department of Health Wastewater Management Section PO Box 47824 Olympia, WA 98504-7824

Other sources of information include:

Local Health Agencies
USDA Natural Resources Conservation Service Office
WSU Cooperative Extension Office

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

Understanding And Caring For Your Septic System

