Fact Sheet

Commonwealth of Pennsylvania • Department of Environmental Protection **Act 537 #1**

UNDERSTANDING SEPTIC SYSTEMS

What is a septic system?

Septic systems (also called "onlot" disposal systems or OLDS) are sewage systems located on the property of the homeowner. They treat and dispose of domestic sewage through natural processes. Liquid waste from a treatment tank percolates through the soil, where it is neutralized and broken down further. Septic system operation and maintenance is the responsibility of the homeowner. In contrast, a centralized sewage system collects and treats sewage from many homes and/or businesses and disposes it off site. Centralized systems often use complex mechanical and chemical treatment methods.

Who uses septic systems?

For many Pennsylvanians, centralized sewage disposal is not an option. In fact, one-quarter of Pennsylvania residents currently depend on septic systems to treat their sewage. In some cases, this is because many rural areas have no central sewage facility. In other cases, a central facility may have reached capacity due to development, requiring new homes to use septic systems on an interim basis.

How do I obtain a septic system permit?

Anyone who intends to install a septic system with a flow of less than 10,000 gallons per day must use the following generalized process:

1. The lot owner or an agent for the owner applies for a permit through the local agency* Sewage Enforcement Officer (SEO);
2. The SEO for the local agency conducts soil profile examination and percolation tests to determine site suitability;
3. The lot owner or agent completes the permit application by including a septic system design based upon the results of the site suitability testing;
4. The SEO approves or denies the permit within seven days of receipt of a completed application; and
5. If approved, the SEO issues a permit. Installation of a system may begin. If denied, the SEO notifies the applicant and provides opportunity for an appeal hearing.
6. The SEO may oversee any step of installation and must inspect the completed system before coverage and use.

What is an SEO and what are his/her duties?

Certified SEO's working for local governing bodies handle the septic system permitting process. This includes the review of soil profiles (deep probes) and percolation tests and the issuance of permits.

What is DEP's role in the permitting process?

DEP can review, monitor and assist a local agency's administration of the permitting process.

What is a deep probe test?

The first test on the site is a deep probe test. In this test, a backhoe pit is dug as deep as eight feet. The SEO enters this pit to examine the make up of the soil (soil profile). From this, the SEO will determine the suitability of the soil for a septic system. If the soil is determined suitable for a type of system (standard or alternate), then a percolation test will be performed. If the soil is determined unsuitable, no permit will be issued.

What is a percolation test?

A percolation ("perc") test measures the rate at which water moves through soil. The test is to determine if the soil will allow water to drain quickly enough to support a properly working septic system. The following process is used to perform a percolation test:

1. A minimum of six holes are dug in the area of the proposed absorption field;
2. The soil is soaked before the actual test to reproduce wet season operation;
3. The day of the test, a final soaking is completed for one hour; and
4. The actual test then begins with a series of measurements of water level drop done at 10 or 30 minute intervals. This test may take as long as four hours or as little as 40 minutes, depending upon the type of soil. (Very sandy soils usually take less time to test than soils with a lot of clay.)

It is very important to realize that although the effluent from a septic or aerobic tank is partially treated, it still contains substances that can affect

* The local agency may be the municipality, a multi-municipal organization, county or joint county Department of Health.

the groundwater, such as viruses, pathogens and nitrates. The soil is a critical component of an efficiently running system. Regular maintenance of the system also is necessary to ensure long-term operation.

There are several variations to the standard septic system depending on soil, site and operational conditions. They are:

1. Standard trench
2. Seepage bed system
3. Subsurface sand filter
4. Elevated sand mound
5. Individual residential spray irrigation system (IRSIS)

For more information on these variations, please contact your local SEO (obtain address/phone number from your municipality's government office).

How does a septic system function?

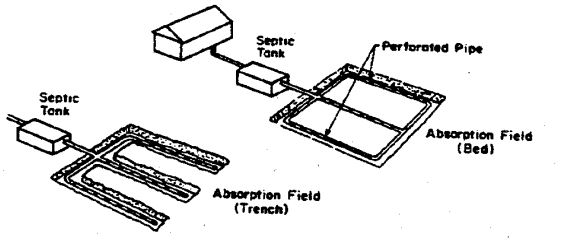


Figure A: Gravity Distribution Systems

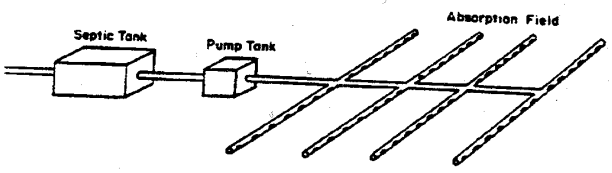


Figure B: Pressure Distribution Systems

1. Sewage, both human waste and water used for bathing and washing, flows to the **septic tank**. Here, primary treatment of the sewage takes place. The heaviest matter falls to the bottom of the tank forming **sludge**. Lighter matter (**scum**) floats on top of the liquid (**effluent**). Sludge and scum must be pumped out regularly.
2. Septic tank effluent then flows to a **distribution box** or a **solid header** in gravity flow systems (see Figure A) or to a **pump tank** in pressurized systems (see Figure B).
3. In both types of systems, the septic tank effluent is then directed to an **absorption area** constructed of pipe placed within a layer of gravel, and percolates through the soil for additional treatment. The soil neutralizes many of the contents of the wastewater and converts other contents to different forms.

How often must my septic tank be pumped?

Up to 50 percent of the solids retained in the tank decompose; the remainder accumulate in the tank. A septic tank should be pumped out at least every three to five years, or according to your local sewage management program which may require more frequent pumping.

Under current Pennsylvania law, a 900-gallon septic tank must be used for a home with three bedrooms or fewer. If six people reside in a three-bedroom house, the tank should be pumped every 1.3 years. If the same system serves a family of two, the tank would be pumped every 5.2 years. Systems installed before 1971 may have septic tanks smaller than 900 gallons. These tanks may need to be pumped more than once a year.

What if my lot conditions do not meet the requirements for a standard septic system?

If your particular lot conditions do not allow the installation of a standard septic system, some alternates may be available. Your local SEO can help find the best system for you depending on your specific site, soil and operational conditions.

How do state and local actions protect Pennsylvania's public health and water quality?

The Pennsylvania Sewage Facilities Act (Act 537) was enacted in 1966 to set uniform standards for the construction or repair of any sewage disposal facility. The two main goals of Act 537 are to correct existing disposal system problems and to prevent future problems. To reach this goal, Act 537 requires the planning of all sewage facilities and the permitting of onlot sewage disposal systems.

Provisions of Act 537 administered by DEP include:

1. Training and certifying SEOs;
2. Providing technical assistance;
3. Reviewing official sewage plans and revisions;
4. Awarding planning grants to local agencies; and
5. Reimbursing local agencies for permitting expenses.

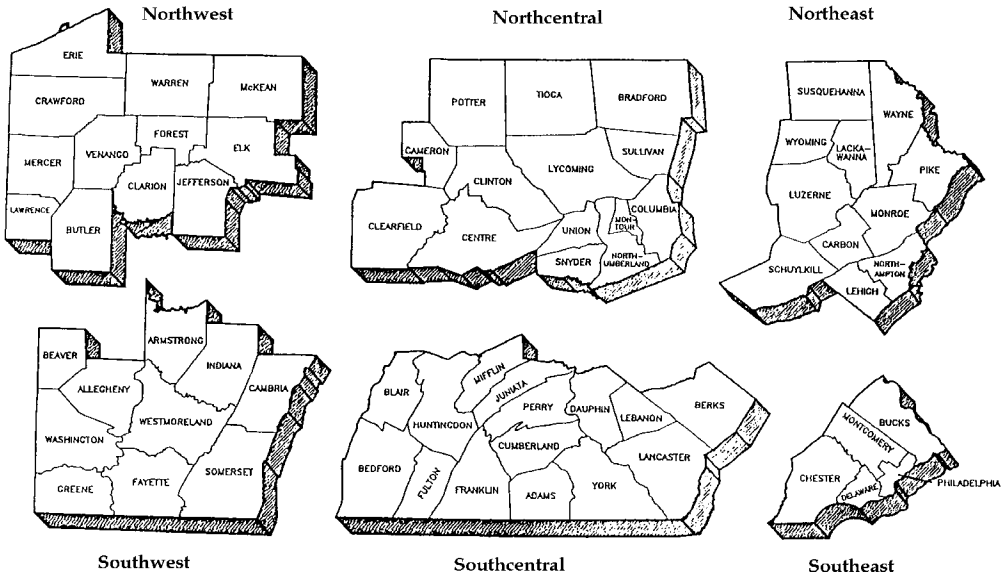
Where can I obtain more information on septic-related questions?

For more information on onlot sewage disposal systems, contact your local SEO or the DEP regional office serving your county.

For more information, visit DEP's Web site at http://www.depweb.state.pa.us/, Keyword: "Wastewater."

For more information,
call the DEP regional office in your area or contact:

Department of Environmental Protection
Bureau of Water Standards and Facility Regulation
Division of Planning and Permits
P.O. Box 8774
Harrisburg, PA 17105-8774
(717) 787-8184



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Edward G. Rendell, Governor

Department of Environmental Protection
Kathleen A. McGinty, Secretary
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