

## Excerpts from “A Homeowner’s Guide to Septic Systems” (EPA 2002)

### **Components**

A typical septic system has four main components: a pipe from the home, a septic tank, a drainfield, and the soil. Microbes in the soil digest or remove most contaminants from wastewater before it eventually reaches groundwater. (See figure on Fate of Nitrogen /Waste Water Treatment Process).

#### ***Pipe from the home***

All of your household wastewater exits your home through a pipe to the septic tank.

#### ***Septic tank***

The septic tank is a buried, watertight container typically made of concrete, fiberglass, or polyethylene. It holds the wastewater long enough to allow solids to settle out (forming sludge) and oil and grease to float to the surface (as scum). It also allows partial decomposition of the solid materials. Compartments and a T-shaped outlet in the septic tank prevent the sludge and scum from leaving the tank and traveling into the drainfield area. Screens are also recommended to keep solids from entering the drainfield. Newer tanks generally have risers with lids at the ground surface to allow easy location, inspection, and pumping of the tank.

#### ***Drainfield***

The wastewater exits the septic tank and is discharged into the drainfield for further treatment by the soil. The partially treated wastewater is pushed along into the drainfield for further treatment every time new wastewater enters the tank. If the drainfield is overloaded with too much liquid, it will flood, causing sewage to flow to the ground surface or create backups in plumbing fixtures and prevent treatment of all wastewater. A reserve drainfield, required by many states, is an area on your property suitable for a new drainfield system if your current drainfield fails. Treat this area with the same care as your septic system.

#### ***Soil***

Septic tank wastewater flows to the drainfield, where it percolates into the soil, which provides final treatment by removing harmful bacteria, viruses, and nutrients. Suitable soil is necessary for successful wastewater treatment.

### **Why should I maintain my septic system?**

When septic systems are properly designed, constructed, and maintained, they effectively reduce or eliminate most human health or environmental threats posed by pollutants in household wastewater. However, they require regular maintenance or they can fail. Septic systems need to be monitored to ensure that they work properly throughout their service lives.

#### ***Saving money***

A key reason to maintain your septic system is to save money! Failing septic systems are expensive to repair or replace, and poor maintenance is often the culprit. Having your septic system inspected regularly (at least every 3 years) is a bargain when you consider the cost of replacing the entire system. Your system will need pumping (generally every 3 to 5 years), depending on how many people live in the house and the size of the system. An unusable septic system or one in disrepair will lower your property value and could pose a legal liability.

### ***Protecting health and the environment***

Other good reasons for safe treatment of sewage include preventing the spread of infection and disease and protecting water resources. Typical pollutants in household wastewater are nitrogen, phosphorus, and disease-causing bacteria and viruses. If a septic system is working properly, it will effectively remove most of these pollutants. With one-fourth of U.S. homes using septic systems, more than 4 billion gallons of wastewater per day is dispersed below the ground's surface. Inadequately treated sewage from septic systems can be a cause of groundwater contamination. It poses a significant threat to drinking water and human health because it can contaminate drinking water wells and cause diseases and infections in people and animals. Improperly treated sewage that contaminates nearby surface waters also increases the chance of swimmers contracting a variety of infectious diseases. These range from eye and ear infections to acute gastrointestinal illness and diseases like hepatitis.

For the complete version of the Environmental Protection Agency's (EPA) Homeowner's Guide to Septic Systems:  
[http://cfpub.epa.gov/owm/septic/septic.cfm?page\\_id=269#Homeowners](http://cfpub.epa.gov/owm/septic/septic.cfm?page_id=269#Homeowners)



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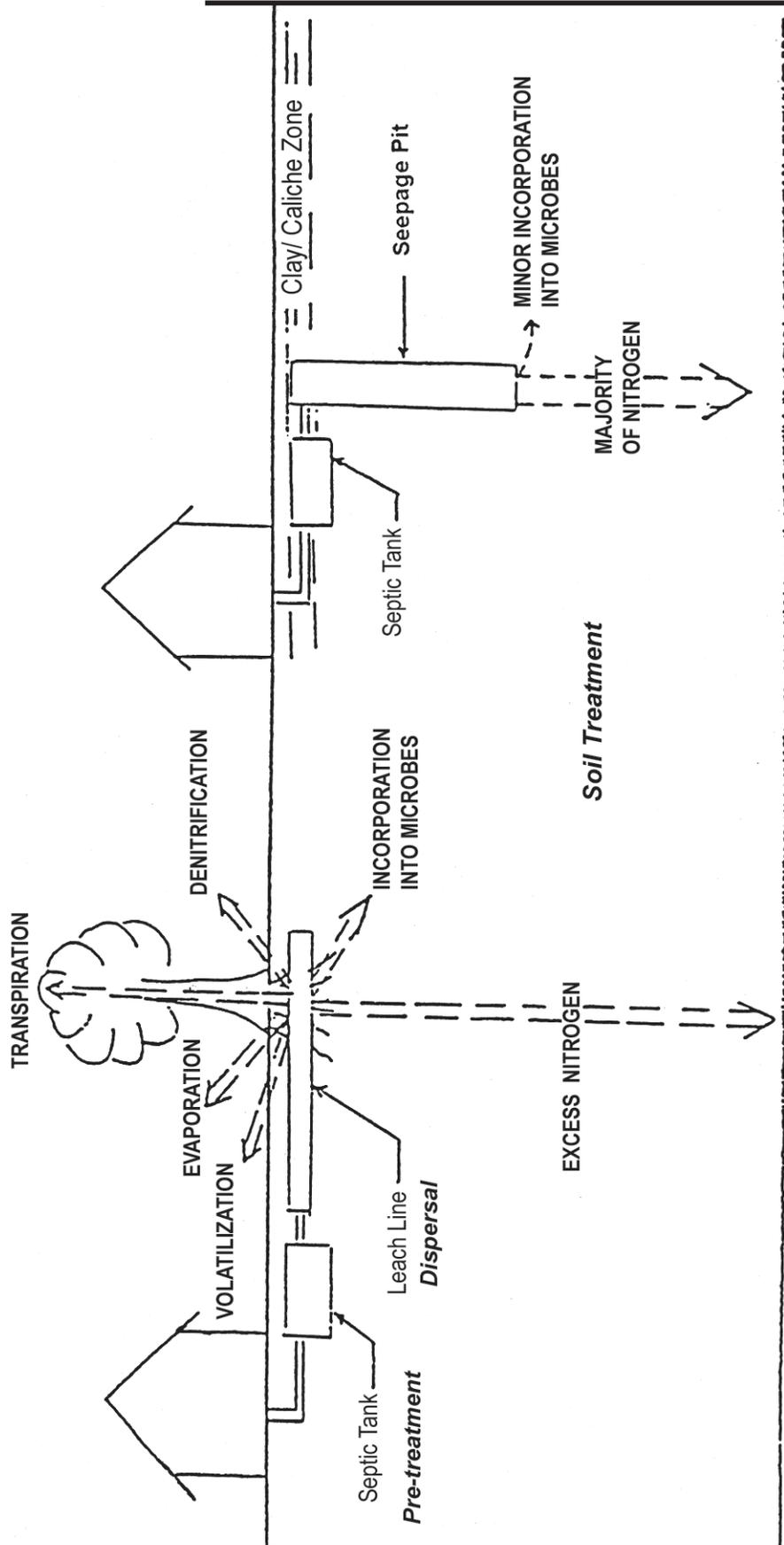
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# Fate of Nitrogen with Subsurface Disposal and Waste Water Treatment Process

Typical Leach Line

Typical Seepage Pit



Groundwater