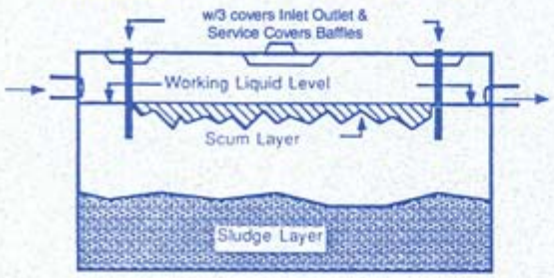
THE SEPTIC TANK

The septic tank provides the first step in treatment. Its primary purpose is to protect the drainfield or other system components from becoming clogged by solids suspended in the wastewater. The wastewater is discharged from the home directly into the tank where it is retained for a day or more. During this time in the tank, the heavier solids settle to the bottom to form a *sludge* layer and lighter solids, greases and oils float to the top to form a *scum* layer.

In addition to acting as a *sedimentation* chamber, and providing *storage* for the sludge and scum, the septic tank also *digests* or breaks down the waste solids. *Anaerobic* and *facultative* micro-organisms that thrive without oxygen feed on the solids to reduce the volume of sludge and scum. In the process, carbon dioxide, hydrogen sulfide and other gases are produced which must be vented from the tank through the *plumbing vent* on your property's roof. Only about 40 percent of the sludge and scum volume can be reduced in this manner, however, so the tank must be pumped regularly to remove the accumulated solids. If you don't pump the tank regularly, it will fill with sludge and the solids will be washed out into the drainfield where they will quickly clog the soil.

Cross Section of a Typical Septic Tank



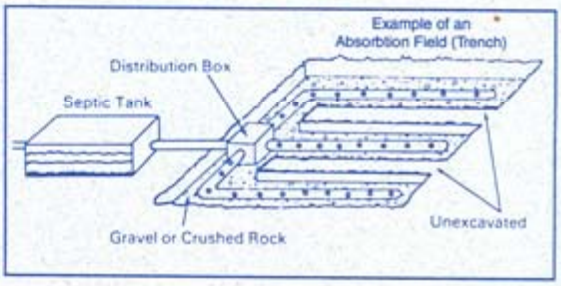
THE SOIL ABSORPTION AREA (FIELD)

The soil absorption area (*leachfield*) is the place where the liquid flowing from the septic tank (called *effluent*) is treated and returned to the groundwater. The purpose of proper design, and of specification codes, is to provide and assure an appropriate site for this to take place.

In general, the leachfield must be placed on permeable, dry soils. Codes generally specify a vertical separation space between the bottom of the leaching area and water table, ledge or bedrock, or other limiting factors. As well, horizontal separation distances to wells, streams, and other features are prescribed in specification codes. When these are maintained, the soil will act as a biological filter and treatment unit, removing *pathogenic* (harmful) bacteria and viruses from the effluent stream, returning the wastewater safely to the water table.

A number of different types of soil absorption areas may be used, including leachfield, mounds, chambers, "proprietary devices", pressure-dosed systems, contour systems, and others.

A Typical Leachfield, one of the accepted Absorption Area Methods



TAKING CARE OF YOUR SYSTEM

Your on-site wastewater treatment system represents a significant investment which you will want to protect. With proper operation and regular maintenance, your system will function better and last longer.

Do not wait until your system shows signs of failure to have your septic tank pumped out. Waiting can mean complete clogging and an expensive repair bill. Call a septic system pumper to inspect your system AT LEAST ONCE EVERY TWO OR THREE YEARS and pump as needed. Periodic pumping of the septic tank is far less costly, than repair, or replacement of the entire system.

While your tank is being pumped, ask the operator to examine the inlet and outlet baffles or tees in the septic tank. If either is broken, have repairs done immediately. The inlet should also be checked to see if wastewater is continuously flowing into the tank from previously undetected plumbing leaks. The outlet baffle is more important than the inlet baffle. Its loss will allow untreated material to go directly to the absorption area; failure of the system is the common result.

Septic systems generally give little warning they are about to fail. However, the following symptoms often indicate the leaching system is becoming clogged: a) Sewage odor near the septic tank or leaching area, b) slowly running drains and toilets, and c) sewage on the ground over the leaching area.

Protect the system by keeping soil over the drainfield covered with vegetation to prevent erosion. Don't drive heavy vehicles over the system; avoid construction over the system. Maintain natural shape of the land immediately down slope of the system and protect this area from cutting and filling. Landscape the yard to divert surface waters away from the tank and drainfield. Be sure that water from the roof, gutters, and foundations drains do not flow over, or into the system.