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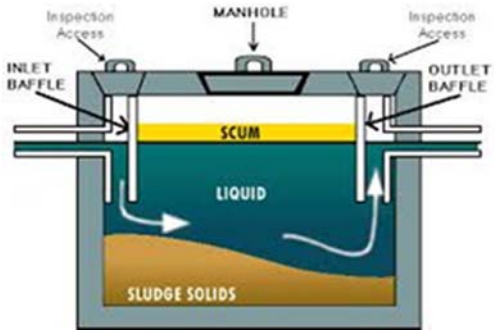
PRIVATE SEWAGE SYSTEMS

A private sewage (onsite waste disposal) system is installed whenever a house is not connected to a public or municipal sewage system. Onsite sewage systems include septic systems, aerobic systems, mound systems, self-contained disposal treatment systems, and cesspools.

The most common type of onsite waste disposal is a septic system which will be the discussed in the article. The main elements of a septic system are a tank, distribution box and drain (absorption) field. The illustration depicts a typical septic system arrangement with an absorption field consisting of buried piping and concrete distribution boxes.



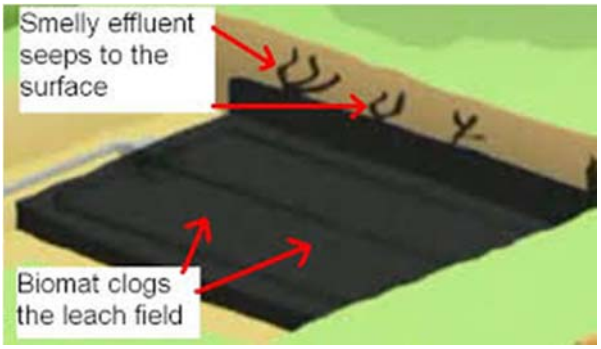
The tanks are made from precast concrete or solid plastic. The septic tank provides a holding area for the liquid and solid waste as an organic bacterial breakdown of the solid waste occurs. The wastewater piped into the septic tank from the house drainage system normally contains 99.9% water and 0.1% solids. As more waste and water enters the tank, the liquid waste (effluent) flows out into the ab- sorption field system. It is the solids in the tank that are of major concern since not all solids will fully decompose. After a time, the septic tank can fill up with these solids -which are referred to as "sludge." If the tank is not cleaned out when needed, the sludge may move out into the absorption field and clog it. It is for this reason that septic tanks should be checked periodically and cleaned out before problems develop. The absorption portion of the septic system is the most critical aspect of the system. If it was improperly installed or abused after installation, the system will not function properly.



The absorption system normally consists of a network of perforated pipes laid in a bed of stones. The stone bed spreads out the effluent and allows greater contact with the soil,

which absorbs and naturally purifies the effluent. Innovative designs and materials are now found in many new systems. Waste loads, site features, soil conditions, and local requirements determine the actual design and pattern of the absorption field piping.

The soil that makes up the absorption field must be porous enough to absorb the effluent. The capacity of the soil to absorb liquids is measured by a percolation test. Your local health or engineering office can advise you on local soil conditions and can usually provide (for a fee) a copy of the original design forms submitted for your home and verification of system approval. Having a copy of the plans is important so that you can determine exactly where your tank and absorption field components are located when pumping or servicing is required.



Saturation of the field can occur due to improper use or maintenance, or due to excessive rainfall or water run-off over the field. Soil saturation may mean a system malfunction, as the proper absorption of the effluent does not take place and it works to the surface. Signs of a malfunction may not be immediately apparent particularly if a system has seen little or limited use.

As with any element of the house, septic systems require maintenance. Proper use of the system is a critical factor for long-term serviceability. Regular inspection and maintenance is equally important. Home owners should have the sludge levels in their septic tank checked at least annually; more often if prior problems have been experienced.

Most tanks need to be pumped *every* 2-3 years; some tanks will need more frequent pumping. Neglect of this important task can lead to a sludge build-up in the tank, blockage of flow, and eventual dogging of the absorption field. If this happens, the absorption field may need to be replaced which is a costly undertaking.

Storm drainage piping and sump pumps should never discharge into a septic system as the high volume of water could overburden the system. Even water flow from the routine use of a garbage disposal or washing machine could overburden a septic system and should be kept to a minimum. Solids introduced through a garage disposal can contribute to buildup problems or premature failure of a septic system. If a disposal is used, anticipate more frequent maintenance needs. In some areas, the use of disposals with a septic system may be prohibited.

Many cleaning products harm the natural bacteria that promote the breakdown of solids in septic tanks and should be avoided. Products advertised to add bacteria to a tank are generally of no value. Homebuyers should check the service record for the system and inquire of the local municipal offices if there are any reported complaints or violations for the system or those in the neighborhood due to common soil; or system concerns.