

Why Do Septic Systems Fail?

- **Does sewage backup into your house?**
- **Is there a wet, smelly spot in your yard that is difficult to mow?**
- **Is your septic tank piped to a road ditch, storm sewer, or stream, or even a river?**

If you answered yes to any of these questions, your septic system is failing. It is not treating the sewage in a safe, sanitary manner.

In a properly operating septic system, the solid material in the sewage is settled out in a septic tank and stored until removed by pumping. The effluent from the tank is still sewage; it has a strong odor and is high in disease-causing organisms. This effluent is treated and absorbed in a soil absorption (or leach) field.

No matter what the cause, septic system failure is a nuisance and a health hazard that should be corrected promptly. Failures can result in pollution of wells, lakes and streams. Some of the more common reasons for septic system failure are discussed here. These failures can be attributed to several causes.

USING TOO MUCH WATER

Using more water than the soil can absorb is the most common reason for failure. The sewage is forced to the surface or backs up into the house. This problem is often the result of a change in water use habits, such as an increase in the size of the family or the addition of a water-using appliance.

Precipitation draining from roofs, driveways and roads onto the soil absorption field area can also put an extra load on the system. If the soil is saturated with water, even seasonally, it cannot accept any more water. The untreated wastewater will either surface or backup.

IMPROPER DESIGN AND CONSTRUCTION

Improperly designed and constructed septic systems are doomed from the start. These systems usually fail in a few months because they are inadequately sized, installed in impermeable soils, or not properly constructed. In Texas, four feet of unsaturated soil must be present beneath the soil absorption system to a limiting layer. The temporary and permanent water table, bedrock, or impervious soil are all considered limiting layers.

The soil is the most important part of the septic system and must be properly evaluated and protected. If the soil layer is too thin, the wastewater will not be treated before it enters the groundwater.

If the soil is too "tight", it will not absorb all the wastewater, forcing it to the surface. The soil profile should be evaluated by a local health department sanitarian or a registered soil scientist to ensure that is appropriate for wastewater treatment and disposal.

When constructing a septic system, it is essential that all components of the soil absorption field be level. If a line lies at too steep a grade or if the distribution system is not level, the wastewater will not be evenly distributed to all portions of the soil absorption field. This may overload one part of the field.

LACK OF MAINTENANCE

The septic tank should usually be pumped every three years to remove the sludge and scum retained in the tank and prevent clogging of the soil absorption field. More frequent pumping is

needed if a garbage disposal is used in the home. Biological and chemical septic tank additives are not necessary and do not eliminate the need for pumping.

A septic tank is equipped with "T" Fittings or baffles at both the inlet and outlet. The inlet baffle prevents short-circuiting of the sewage, and the outlet baffle prevents the floatable scum from moving out into the soil absorption field. In time, these baffles can deteriorate and drop off into the tank. It is a good idea to check the condition of the baffles when the tank is being pumped and *replace those in poor condition.*

CORRECTIVE ACTION

Any repair or new installation of a septic system must be approved by a local sanitarian, and a permit must be issued by the local health department.

Water conservation- This reduces the amount of water the absorption field must accept. Conservation also reduces the flow through the septic tank allowing more time for solids to settle out. *This can prolong the life of any soil absorption system.*

Add field lines- Install additional lines to the existing soil absorption field thus increasing the size and capacity of the existing soil absorption system allowing more wastewater to be accepted.

Install an alternative soil absorption field- This involves constructing a second soil absorption system and diverting all wastewater to it for at least one year to rest the original field. The fields can then be alternated. Resting allows drying and digestion of the scum layer which clogs the soil pores.

Repair physical damage- Leveling the distribution box or repairing crushed or broken pipe may be necessary to restore the system. Tree roots may also be interfering with the operation of the soil absorption field and must be removed.

Improve surface and subsurface drainage- Divert all surface and groundwater away from the soil absorption field. The soil must absorb all the wastewater from the house; surface and groundwater will only add to the load.

WHEN A SYSTEM FAILS

- Do not place more soil over a surfacing soil absorption field; this does not fix the system and it will soon surface again.
- Do not just pipe the sewage to a road ditch, storm sewer, stream, or river; this pollutes the water and creates a health hazard.
- Do not run the sewage into a sink hole or drainage well; this pollutes the groundwater.
- Do not wait for the system to fail before pumping the septic tank. Once a system fails, it is usually too late to pump the tank.

In some cases corrective measures are not enough; a new system must be constructed. However, a properly designed, constructed and maintained septic system can effectively treat wastewater for many years. For more information on septic systems contact: Uvalde County Health Department, (830)278-9255 or (830)486-6227.