

Septic system Basics

The current hit TV show “Dirty Jobs” shows hard working Americans toiling in work conditions that most of us couldn’t fathom enduring on an everyday basis. No doubt one of the most unpleasant jobs would be inspecting and/or emptying septic tanks. For those homeowners that are not connected to a municipal sewer system, septic tank care and maintenance is crucial to keeping a property livable. A properly functioning septic system is one of the most important aspects to consider when buying a home. It remains one of the most litigious issues in many real estate transactions. Make sure you have a home’s septic system inspected thoroughly before purchasing a property.

A septic system is simple in theory and will last for many years if properly maintained. It consists of a watertight container, made from concrete, steel, or fiberglass, that functions as a detention tank for sewage sludge. The second part is the disposal field for the absorption of liquid waste.

Raw sewage from the house is discharged through the drain line into the septic tank. After it settles, bacteria in the tank convert the solids into a liquid and a sludge that accumulates in the bottom of the tank. As the level of liquid rises over time, it discharges out a port near the top of the tank into the drainage field, or leach field. Usually this field is a series of perforated pipes set in gravel that allow the liquid to slowly absorb into the ground.

As a result of this continuing process, several types of gases are produced. Most notable among these is methane, which is highly flammable. If the plumbing system is connected properly these gases harmlessly flow back through the pipes and out the vent stack pipe that usually exits a house through the roof. Frequently these pipes will terminate in the attic. All this does is allow sewer gases back into house. One house I inspected recently had the pipe terminating near the pilot light on a furnace in the attic. That was a potentially explosive situation.

The reason for “P” traps under sinks and bath tubs is to allow water to settle at the bottom of the trap to block this gas from entering the house through drains. If there is no water at the bottom of the traps, you may smell an undesirable odor. If the curiosity of what this smells like is getting the best of you, wait till your roof is dry, climb up, and slowly place your face over the top of the vent pipe. This should be enough to convince you of the need to maintain all aspects of your plumbing system.

In next month’s article I will continue this topic and give tips on how to maintain you system.

Caring for you septic system.

The size of the leach field will depend on the soil absorption rate. This can be affected by the type of soil, and the level of the surrounding water table. In low lying areas, the entire system must be above the level of the normal topography of the land. This is called a mound system and is generally more expensive to install. Rough estimates of this can range from \$15,000-\$25,000. If the home you are living in or are considering buying has a leach field that is undersized, the system will likely fail prematurely. It is recommended that you have the septic tank pumped every 2-4 years depending on the amount of people in your home and the amount of use. A properly maintained system should last at least 20-30 years.

As mentioned previously, the septic tank has bacteria “installed” in it when the system is put in place. These little invisible critters are crucial to a properly functioning system. You have the power to help or hurt these “friendly” bacteria. The following procedures will help to feed and maintain the bacteria that do all the dirty work in your septic system:

1. Use dry baker’s yeast to replenish the bacteria. Dump 2 tablespoons in the toilet every month and flush 3 times.
2. Clean toilets with white vinegar. This will feed the bacteria.
3. Use natural mineral cleaners to clean sinks and tubs. An example of this is 20 mule team borax.
4. Do not use any chlorine based chemicals to clean. When flushed or washed down the drain, it will kill the bacteria in the septic tank.
5. Remember to have it pumped every 2-4 years.
6. If the seepage field is a clay type soil, do not discharge the waste water from the water softener into the system. The salt brine is not broken down by the bacteria and can flow in the leach field and clog up the fine voids in the soil.

Also, discharging large quantities of water in the system, such as rain run-off can flood the system and cause solids to float to the surface and clog up the pipes in the leach field. An adequate evaluation of the plumbing system requires an interior and exterior inspection. This involves actually pumping the tank out and inspecting the inside of the tank.