



**JJ “The Plumber”
Wants You To Know
About Septic Systems**

If you are like most people, you know very little about your septic tank system. This is understandable. In urban and suburban areas there are sewers to carry household waste to municipal wastewater treatment plants. In more rural areas, however, septic tank systems provide the functions of both sewers and treatment plants.

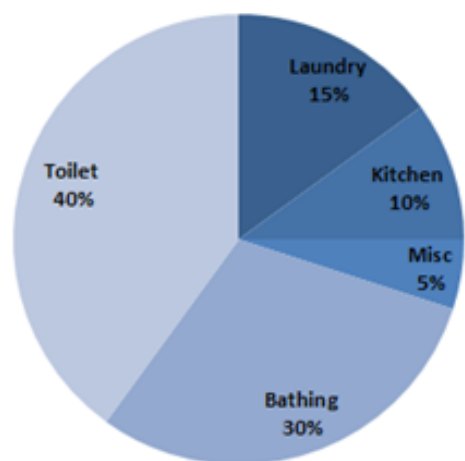
All household waste is disposed of through the septic system. The proper operation of the septic system is essential to health, property value, and the ecology. To see if you know enough about your septic system, answer the following questions. If you cannot answer *all* of the questions, your septic system could become a huge aggravation, public nuisance, health hazard and/or financial burden.

- Do you know what a septic tank is and how it works?
- Do you know what kind of soil absorption area you have and how it works?
- Do you know what causes septic systems to fail?
- Do you know what it costs to replace a faulty septic system?
- Do you know that a faulty septic system creates health hazards and pollutes the ground water?

These are very serious questions. The health of your family and the value of your property rely heavily upon the answers to these questions.

The saying, "An ounce of prevention is worth more than a pound of cure" was never more true than it is with septic tank care. A small commitment to the care of your septic system will protect you indefinitely from the nightmare created by a failing system. This pamphlet will try to give you a fairly clear picture of how household waste is treated from drain to soil.

The quantity and composition of waste generated in the home varies according to the number of residents, their personal water usage, and the water-using appliances in the home.

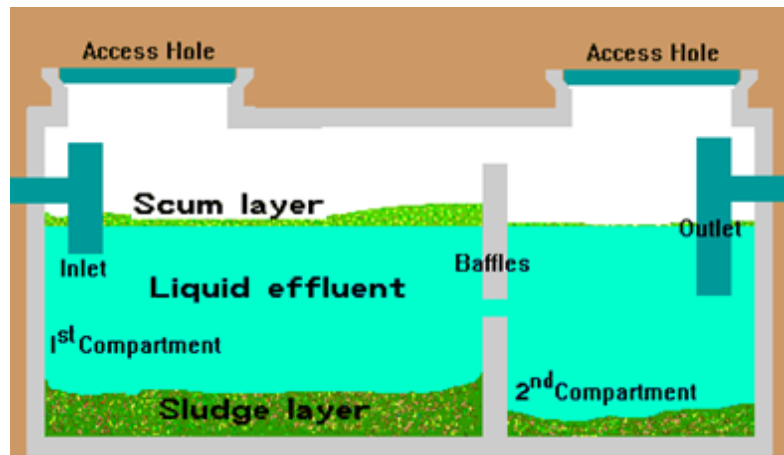


THE SEPTIC SYSTEM:

The septic system is a small, on-site sewage treatment and disposal system buried in the ground. The septic system is comprised of a *septic tank* and a *soil absorption area*.

Webster's Dictionary defines the septic tank as "a tank in which waste matter is decomposed through bacterial action." The *septic tank* was patented in London around 1900. The modern septic tank is a water-tight box usually made of precast concrete, polyethylene, or reinforced fiberglass. When household waste material enters this box, several things occur:

1. Organic solid material floats to the surface and forms a layer of what is commonly called "scum." Bacteria in the septic tank biologically convert this material to liquid.
2. Inorganic or inert solid materials and the by-products of bacterial digestion sink to the bottom of the tank and form a layer commonly called "sludge."
3. Only fairly clear water should exist between the scum and sludge layers. It is this clear water and *only* this clear water that should overflow into the soil absorption area.



Solid material overflowing into the soil absorption area should be avoided at all costs. It is this overflow of solids that clogs soil pores and causes septic systems to fail. Two main factors cause solid material to build up enough to overflow: Bacterial deficiency and lack of sludge removal.

Bacteria must be present in the septic tank to digest the organic solids. Normal household waste provides enough bacteria to digest the solid UNLESS any harm is done to the bacteria. Bacteria are very sensitive to environmental changes. Many home-care products used in most homes every day will destroy bacteria. Check the labels of products you normally use. Labels carrying any of the following warnings will kill bacteria:

- Harmful or fatal if swallowed
- Avoid contact with the skin
- Do not get in open cuts or sores
- If comes in contact with eyes, call a physician immediately

Check the following list. These are commonly used home-care products that will kill bacteria necessary for proper septic tank operation.

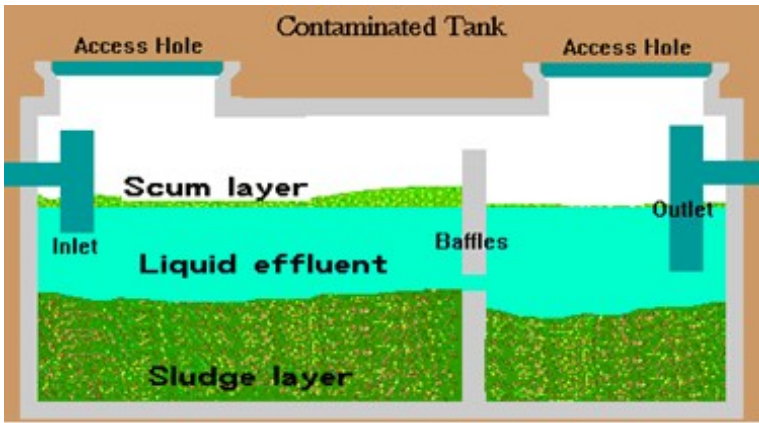
Many of these products are used in most homes on a daily basis:

detergents	bleach	polishes
disinfectants	acids	sink & tub cleaners
toilet cleaners	cleaning compounds	caustic drain openers

Many people do not think of the effect of these products on the septic system when the products go down the drain. What kind of effect do you think *anti-septics* have on your septic tank?

Bacteria must be present to digest and liquefy the scum. If not digested the scum will accumulate until it overflows, clogging the soil absorption area.

The sludge in the septic tank, "inorganic and inert material and by products of bacterial digestion," is not biodegradable and will not decompose. If not removed, sludge will accumulate until it overflows, again clogging the soil absorption area.



SEPTIC SYSTEM MAINTENANCE:

The U.S. Government Department of Health and Human Services says, "A septic tank system will serve a home satisfactorily only if it is properly designed, installed, and adequately maintained. Even a good system which does not have proper care and attention may become a nuisance, and burdensome expense."

Septic system maintenance means two simple things. (1) **First, sludge that accumulates in the bottom of the tank must be pumped out periodically.** How frequently depends on the size of the tank, the use it gets (see chart below), and the condition of the system. There is no additive that you can put in the tank that will deal with the sludge. IT MUST BE PUMPED OUT. If not pumped out, it will eventually overflow into the soil absorption area. This will clog the system, and it will need to be replaced, at enormous expense and inconvenience.

The second part of septic system maintenance involves the bacteria necessary for solids digestion. (2) **If bacteria killing products are used in the home-as they usually are-the bacteria must be replenished.** If the bacteria are not replenished, the septic system will fill up with solid material and overflow into the soil absorption area. This will clog the system and it will have to be replaced.

Homeowners spend thousands of dollars to landscape their yards, and often times it's those efforts that ends up destroying your septic system. **Plant only grass and bushes over and near your septic system.** Roots from nearby trees or shrubs might clog and damage the system. Trees should be at least 10' away from the septic system.

Make sure that your septic tank is in an area that you will not drive or park vehicles on top of the tank. The weight can compact the soil in your drain field causing the system to not drain properly or damage the pipes, tank, or other septic system components. In rural areas, it's also necessary to keep livestock off the septic tank for the same reasons.

Your septic tank could be overflowing solid material into the soil **RIGHT NOW** and you won't know it until it blocks the soil so badly that no more drainage is possible. This blockage takes varying periods of time depending on soil structure. But this is fact: a neglected system WILL get blocked; it WILL overflow; it WILL have an obnoxious odor; it WILL contaminate and pollute. It will probably have to be replaced. The first septic system "emergency" usually marks the beginning of the end. Replacement costs vary from \$8,000 to \$15,000 and up.

SOIL ABSORPTION OR LEACHING AREA:

There are many kinds of soil absorption or leaching systems. There are too many to discuss them all in this pamphlet. The most common way to carry off the overflow water from the septic tank is the leaching field.

Leaching fields generally consist of a network of perforated pipes laid in a gravel-lined trench. Overflow from the septic tank runs into these pipes where the clear water is filtered into the gravel. Eventually the clear water is removed at the ground surface by evaporation and transpiration of plants. Unfortunately, when solids go into these pipes they cause bigger problems than just needing your septic tank pumped out. Solids clog the pipe perforations - this results in slowed drainage that will eventually stop completely. With the leaching field out of service and nowhere for the water to go your septic tank will begin to overflow. When it gets to this point, in almost all cases, the leach field will have to be exposed and replaced.



Tank Size	1	2	3	4	5	6	7	8	9	10
1,000 gallons	12.4	5.9	3.7	2.6	2.0	1.5	1.2	1.0	0.8	0.7
1,250 gallons	15.6	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
1,500 gallons	18.9	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
2,000 gallons	25.4	12.4	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0
2,500 gallons	30.9	15.6	10.2	7.5	5.9	4.8	4.0	3.5	3.0	2.6

Note: Pumping frequency can increase by 50 percent if garbage disposal is used

*The Southern Nevada Health District recommends having your tank pumped once every four to five years.

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