



# DALE COOK BACKHOE SERVICE, INC.

Septic Systems • Site Evaluations • Backhoe Work  
Excavating • Water Lines • Land Clearing • Hauling

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## FREQUENTLY ASKED SEPTIC SYSTEM QUESTIONS

### **What is an OSSF (On-Site Sewage Facility)?**

This is the term used when referring to "septic systems".

### **What is septic system?**

A septic system is a method of dealing with household wastewater in areas where public sewers are not available. The term "septic" refers to the anaerobic-bacterial environment that develops in the tank and which decomposes or mineralizes the waste discharged into the tank. The standard type of septic system involves a septic tank (to hold wastewater from toilets and drainpipes until solids settle in the tank), and a system of pipes that distribute the remaining liquid waste underground over a large area --the drainfield--where the wastewater "percolates" through the soil, which helps clean the water. The purpose is to insure that this filtration through the soil is sufficient to clean the wastewater before it reaches drinking water well sources or surface water.

### **The septic tank in standard systems:**

A septic tank generally consists of tanks between 1,000 and 2,000 gallons. The primary compartment of the septic tank receives all the sewage and wastewater from your household use of toilets, kitchen sink, garbage disposal, dishwasher, bathtubs, showers, clothes washers, and other plumbing fixtures. Solids will accumulate in the primary compartment of the septic tank. The "sludge" sinks to the bottom and the "scum" floats on the top. The second compartment allows for most of the suspended solids to settle out, providing a clearer effluent to the disposal field or pump tank. Bacteria in the sewage digest the solids, but not as fast as solids are added. When a large amount of solids accumulate, they must be pumped out before they are introduced into the disposal field. Solids in the disposal field can clog the distribution piping, reduce the efficient distribution of effluent and may cause effluent overflow. Such conditions are a potential health hazard and are illegal. Costly repairs may result, as well as legal charges and fines. Therefore, the maintenance of the septic tank is very important. The tank should be pumped every two to four years by a licensed pumping service. The owner or owner's representative should be present when the tank is pumped to ensure that the solids as well as the liquids are pumped from the tank. No structures or driveways should be built over the septic tank, and no traffic should be allowed over the tank.

The owner should strictly limit the amount of non-digestible and hard to digest wastes introduced into the septic tank including but not limited to grease, colored toilet paper, sanitary napkins, tampons, coffee grounds, disposable diapers, paper towels, cigarette butts, photographic wastes, plastics, paints, varnishes, solvents, oils, pesticides, medical wastes, metals, and large amounts of solids generated by garbage grinders. The backflush from water softeners should not be introduced into the septic tank or disposal field. Normal household use of soaps, detergents, bleach and other cleaning agents will not impair the functioning of the septic tank. Yeast or commercially available microbial preparations, while not harmful to the tank, will not enhance its functioning and are a waste of money.

### **The disposal field in standard systems:**

The disposal fields dispose of the effluent that is either absorbed into the soil or pumped into the soil. If you have multiple fields, these fields must be manually switched by means of a valve. Simply switch the handle of the valve

from one field to the other every six weeks to three months. Only your individual experience can dictate how often the fields should actually be switched, but four to six times per year is suggested for most households. The disposal fields must be kept vegetated and regularly mowed. It is suggested that the fields be overseeded with winter rye in the fall to provide good transpiration (loss of water through plant respiration). No structures, sidewalks, patios, decks or driveways should be built over the disposal field, and no traffic should be allowed over the disposal field.

### **The Aerobic Treatment Unit**

A maintenance contract with a qualified maintenance company authorized to service your particular aerobic treatment unit (ATU) must be in effect at all times. The maintenance company will make service checks of your aerobic treatment unit three times each year, and may make recommendations for additional service or repairs needed. It is important to follow all the recommendations made by the maintenance company.

The "trash" tank receives all the sewage and wastewater from your household use of toilets, kitchen sink, garbage disposal, dishwasher, bathtubs, showers, clothes washers, and other plumbing fixtures. Solids will accumulate in the "trash" tank. From the "trash" tank, effluent flows to the ATU. The second compartment of the ATU is the treatment compartment. Oxygen is introduced into the wastewater by means of an agitator or diffuser. Aerobic microorganisms in the sewage digest the suspended solids and reduce the biological oxygen demand (BOD) in the sewage. The final compartment of the ATU, or clarifier, provides final filtration of the effluent, and allows sludge to return to the treatment chamber. In some units, this is also where the effluent is chlorinated. When a large amount of solids accumulate in the "trash" tank or the primary compartment of the ATU, they must be pumped out before they are introduced into the treatment chamber or the disposal field. The "trash" tank and the primary compartment of the ATU should be pumped every two to three years by a licensed pumping service or more often if recommended by the maintenance company. No structures or driveways should be built over the aerobic treatment unit, and no traffic should be allowed over the aerobic treatment unit.

The owner should strictly limit the amount of non-digestible and hard to digest wastes introduced into the "trash" tank, including but not limited to grease, colored toilet paper, sanitary napkins, tampons, coffee grounds, disposable diapers, paper towels, cigarette butts, photographic wastes, plastics, paints, varnishes, solvents, oils, pesticides, medical wastes, metals, and large amounts of solids generated by garbage grinders. The back-flush from water softeners should not be introduced into the aerobic treatment unit or disposal field. Normal household use of soaps, detergents, bleach and other cleaning agents will not impair the functioning of the ATU. The disinfection unit MUST be stocked with the appropriate type of chlorine tablets at all times. Failure to do so may result in spraying pathogenic bacteria and viruses in your yard!!

The ATU is followed by a pump tank. A submersible pump delivers sewage effluent to the spray area. It is equipped with a timer and a float switch that turn the pump on and off, and another float switch mounted higher in the tank which will activate a high water alarm, should the pump fail. The alarm turns on a light or a buzzer, which should be checked daily. If the alarm for the pump tank OR the alarm for the ATU goes off, contact the maintenance company. Please keep in mind that, in the event of a power failure to the house, neither the pump nor the alarm will function. The electrical connection for the pump and alarm should be kept free of ants.

### **The Disposal Area for an Aerobic Treatment Unit**

The disposal fields dispose of the effluent by spraying it onto the lawn. If there is a timer, it will turn the pump on to spray once in 24 hours, usually at night. Otherwise, the pump will activate on demand (when the pump tank fills to the correct level). The disposal fields must be kept vegetated. It is suggested that the fields be over-seeded with winter rye in the fall to provide good transpiration (loss of water through plant respiration). No structures, sidewalks, patios, decks or driveways should be built in the spray area, and no traffic should be allowed in the spray area.

### **What is a Registered Professional Sanitarian?**

A Registered Sanitarian is qualified to design all "Non-Conventional / Professionally Designed" septic systems such as a "Low Pressure Dose" or an "Aerobic Treatment Unit" as well as "Conventional" septic systems. Non-Conventional or professionally designed systems are required when a conventional septic system will not be allowed by County regulations.

### **What is a State Licensed Site Evaluator?**

A site evaluation must be performed on every tract of land where a septic system will be installed. Only a state-licensed "Site Evaluator" can submit a site evaluation to the local regulating authority. Site evaluation criteria includes the following:

- Soil texture analysis
- Gravel analysis
- Restrictive horizon analysis
- Groundwater evaluation
- Topography
- Floodplain determination

*A septic design cannot be approved without a complete site evaluation.*

### **What is a State Licensed Septic Installer?**

Any individual who constructs any part of a septic system shall hold a current Installer I license for standard systems, and an Installer II license for aerobic and non-standard systems. These licenses are issued by the state.

### **Can I install my own septic system?**

Yes, under certain circumstances. If a Professional Engineer or TCEQ-licensed Site Evaluator determines that the soil is suitable for a standard septic system, a single-family residence homeowners may install or repair their own systems without being a registered installer. However, they may not compensate anyone for doing any part of the job (such as digging trenches) unless that individual is a licensed installer. This exception to being a registered installer does not apply to owners developing the property for sale or lease.

### **Can I choose the type of septic system that I want?**

Yes, there are usually alternatives to choose from. If your Site Evaluator determines that you have Class Ib, Class II or Class III soil to at least 42 inches below the surface, with no restrictive subsurface horizons and no restrictive surface features, then your options are usually open to any type of septic system. On the other hand, if you have Class Ia or Class IV soil (clay soils), restrictive horizons, or any other restrictive site features, then your choices are limited to only several types. Be sure to ask your Site Evaluator about all your options. Also, be aware that several subdivisions have public sewer lines available and some require all residences to have aerobic septic systems.

### **When does a septic system have to be designed by a Registered Sanitarian or Professional Engineer?**

- Small lots - lots smaller than one acre when served by an individual water system (well).
- Small lots - lots smaller 1/2 acre when served by a public water supply (no individual well).
- Non-standard and other more complex septic systems such as Soil Substitutions, Low Pressure Dosing, Absorptive Mounds, and Aerobic Treatment Units.
- All septic systems in the Edward's Aquifer Recharge Zone.
- Any septic system proposed to serve manufactured housing communities, recreational vehicle parks, and multi-unit residential developments, which are owned or controlled by a person who rents or leases such space.
- System(s) needing a variance from the rules.
- Where local rules require it.

### **Why would a non-standard septic system be required?**

- When unsuitable soil is encountered such as greater than 30% gravel or fractured rock.
- When shallow groundwater is encountered.
- When a restrictive horizon is encountered (solid rock layer).

### **Is a septic system permit required and what does it cost?**

State and county regulations require that a permit be issued by the department prior to constructing or making repairs to a septic system. Permit applications can be taken care of by us, or you can call your local Environmental Health Department with any questions you might have.

### **How long does my septic system permit last?**

Septic permits are generally valid for one year. Be sure to call the regulating authority if you think your construction will go beyond the expiration date, so a reasonable extension can be worked out.

### **What do I need to do to get started?**

In order to apply for your septic permit, you must first have a survey or plat of the property and a deed or tax record showing who the landowner is. In order to design a septic system for your property, the designer will need a copy of the survey or plat of the property. In addition to the survey or plat of the property, two 5' deep profile holes must be excavated with a backhoe at opposite ends of the proposed disposal or drain field area to determine the characteristics of the soil.

### **Why do I need a maintenance contract?**

TCEQ and county regulations require a maintenance contract with a certified provider if you own property served by an aerobic treatment unit.

### **What should I do if my septic system is failing?**

We will be happy to consult with you on the causes for failure and advise you on how the failure can be remedied. We can also advise you on state and county regulations pertaining to emergency repairs, if needed. A repair permit, if required, will need to be obtained before any repairs can be completed.

### **How often should my septic tank be pumped?**

Regulations require that septic tanks be pumped by a licensed pumping company. An average of every two years is recommended for most families.

## **Why is it necessary to have my septic tank pumped?**

The cost of a septic system is a major investment. To protect that investment and prolong the life of your system, it is necessary to have the septic tank pumped out on a regular basis. Since all solids in your household wastewater settle in the tank, it is important to have the tank pumped to avoid having sludge block the pipes that allows the liquids to move on to the drain field for filtration. Failure to routinely pump the septic tank may result in the clogging of your drain field and may cause a premature malfunction of the system.

### **Tips on maintaining your septic system:**

- On-Site Sewage Facilities (OSSF) should not be treated as if it were a normal city sewer system.
- The excessive use of in-sink garbage grinders and grease discarding should be avoided. In-sink garbage grinders can cause rapid buildup of sludge or scum resulting in a requirement for more frequent cleaning and possible system failure.
- Do not use the toilet to dispose of cleaning tissues, cigarette butts, trash, or other solids. This practice will waste water and impose an undesired solids load on the treatment system.
- Septic tanks should be pumped before sludge accumulates to a point where it approaches the bottom of the outlet device. If sludge or scum accumulates to this point, solids will leave tank with liquid and possibly cause clogging of the perforations in the drainfield lines. This results in sewage surfacing or backing up into the house through the plumbing fixtures.
- Since it is not practical for average homeowners to inspect their tank and determine the need for cleaning, a regular schedule of cleaning the tank (2-4 year intervals) should be established. Commercial cleaners are equipped to readily perform the cleaning operation. Owners of septic tank systems must engage only persons registered with the TCEQ to transport the septic tank cleanings.
- Do not build driveways, storage buildings, or other structures over the treatment works or disposal field.
- Chemical additives or so-called enzymes are not necessary for the operation of the septic tank. Some of these additives may even be harmful to the tank's operation.
- Soaps, detergents, bleaches, drain cleaners, and other household cleaning materials will very seldom affect the operation of the system. However, moderation should be exercised in the use of such materials.
- It is not advisable to allow water softener back flush to enter into any portion of the OSSF.
- The liquid from the OSSF is still heavily laden with bacteria. The surfacing of this liquid constitutes a hazard to the health of those who might come into contact with it.

### **Tips on water conservation:**

- Showers usually use less water than baths. Install a water saving showerhead that uses less than 2 ½ gallons per minute and saves both water and energy.
- If you take a tub bath, reduce the level of water in the tub from the level to which you customarily fill it.
- Leaky faucets and faulty toilet fill-up mechanisms should be repaired as quickly as possible.
- Check toilet for leaks that may not be apparent. Add few drops of food coloring to the tank. Do not flush. If color appears in the bowl in a few minutes, the toilet fill or ball cock valve needs to be adjusted to prevent water from overflowing the standpipe or the flapper at the bottom of the toilet tank needs to be replaced.
- Reduce the amount of water used to flushing the toilet by installing one of the following: a new toilet (1.6 gallons); a toilet dam; or filling and capping one-quart plastic bottles with water (usually one is all that will fit in smaller toilet tanks) and lowering them into tank of existing 3.5 gallon or larger toilet. Do not use bricks since they may crumble and cause damage to the fixture.
- Try to run dishwasher with a full load, whenever possible.
- Avoid running the water continuously for brushing teeth, washing hands, rinsing kitchen utensils or for cleaning vegetables.
- Use faucet aerators that restrict flow to no more than 2.2 gallons per minute to reduce water consumption.
- Keep a container of drinking water in the refrigerator instead of running the faucet until water turns cold.
- Insulate all hot water pipes to avoid long delays of wasted water while waiting for the heated water.
- Ask your local governments about their programs to conserve water and how they can help you save water.