

How to Care for Your Septic Tank and Septic System

Septic System Ongoing Maintenance

Put these tips to use for a clean and trouble-free septic system.

Fun Fact: Typical Homeowner Costs (need good reference)

Septic: a few \$100/year

Sewered Systems – a few \$1000/year

Laundry & Dishwasher #1 Culprits in Septic Failure

- Certain cleaners can kill beneficial bacteria in the septic tank, so solids won't break down as well. (Avoid bleach, antibacterial products and non-biodegradeable soaps. Look for Septic Safe products, which healthier for you.)
- Using too much soap or detergent can plug the soil pores in the drainfield and cause the system to fail.
- The best solution is to use a liquid laundry and automatic dish detergents which seldom have clogging fillers that may harm a septic system. Powdered detergents may have fillers like clays or plastics that can cause soil pores to plug.
- New horizontal laundry machines use 70-90% less water, 1/3 the detergent and save substantially on drying \$\$
- Avoid dishwasher products with sodium hypochlorite (bleach) in favor of those with surfactants or baking soda that are septic safe
- Consider adding a washing machine filter.
 - A typical family washing machine produces enough lint *each year* to carpet an *entire living room floor!*
 - Much of our clothing is now manufactured with synthetic materials such as polyester and nylon.
 - These substances are not biodegradable, tend to stay in suspension and are flushed out to the drain field, where they plug up the pores of the soil bed. Once these materials enter the soil, there is no way to remove them.

Do Not Pour Grease Down the Drain

- Grease can clog the septic drainfield, making it impossible for soil to absorb liquids. If that happens you'll need a new drainfield.

Avoid Hazardous Chemicals

- Varnish, paint thinners, motor oils, gasoline and other similar chemicals can ruin your system and are a hazard to groundwater. Dispose of them properly.

The Toilet Isn't a Garbage Disposal

- Never flush cat litter, disposable diapers, sanitary napkins, tampons, paper towels, facial tissues, coffee grounds, or cigarette butts and filters. They'll clog your septic tank in less time than you might imagine.

Don't Overload the Septic Tank and Drainfield

- Check faucets and toilets for leaks; make repairs if necessary.
- Use aerators on faucets and flow reducer nozzles on showers to help lower water consumption.
- Reduce water levels for small loads of laundry or convert to horizontal
- Wait until the dishwasher is full to run it.
- Use a displacer to reduce the amount of water needed to flush the toilet.

Use Garbage Disposals Wisely

- A garbage disposal can double the amount of solids added to a septic tank.
- Choose a top-line disposal that grinds food into tiny particles that are easier for a system to digest.

Divert Rainwater From the Septic Drainfield

- A soggy drainfield won't absorb and neutralize liquid waste. Plan landscaping, roof gutters and foundation drains so that excess water is diverted away from the septic drainfield.

Keep Trees Away from the Septic System

- Discourage root damage by keeping trees at least 100 feet away from the septic system.
- Trees with very aggressive roots, such as willows, should be even farther away from the system.

Protect the System from Damage

- **Do not** drive over the drainfield, build a structure on top of it, or cover it with concrete or asphalt.
- **Do** plant grass on the drainfield to minimize soil erosion.

Perform Regular Maintenance

- Solids must eventually be pumped from the tank. Many experts advise a family of four with a 1,000 gallon septic tank to have the tank pumped after 3-5 years of

- full time use. Other experts say you can go much longer between pumping operations.
- Never attempt to open a septic tank yourself. Gases and bacteria in it are dangerous.

Tips:

1. **Toilet displacers** can reduce the amount of water needed to flush.

“In the land of sun and fun some only flush for #1”

2. **Garbage disposals** are available that periodically inject small amounts of enzymes into the drain. Keep the reservoir filled--you won't have to remember to add enzymes on a monthly basis.

3. **Enzymes, yeast, bacteria and sugar - Do you own research**

Some professionals recommend a monthly dose of an enzyme product that adds beneficial bacteria to the septic system. Others say it isn't necessary and won't improve the performance of your system. Bottom line, septic additives are not expensive, so they can't hurt. Some people swear that flushing a few packets of yeast each month is a great way to keep septic systems in shape. Some say sugar is great for grease eating bacteria.

4. **Saving Money If Your System Fails \$100's vs. \$1,000's**

In quite a few cases, a tune-up can fix your system and you can avoid the high costs of replacing the system. This tuneup includes properly pumping the tank, cleaning (jetting) the drainfield lines, and installing washing machine and effluent filters. If these measures are not sufficient, some failed systems can be rejuvenated by fracturing the soil. This process utilizes a hollow tube inserted into the soil, then a 300 pound blast of air is injected into the soil creating thousands of tiny fissures. These fissures allow the drainfield to drain, creating an oxygen atmosphere and the aerobic bacterial colonies to repopulate. Aerobic bacteria, which require oxygen, typically live in the top 26 inches of the drainfield and process waste much more quickly than anaerobic bacteria. This process can be performed in a matter of hours with no digging or damage to the yard. You can learn more at <http://www.terraliftinternational.com>.

If you have a clay soil which has become plugged due to sodium from wastewater binding with the clay, Septic Seep can help. This product releases sodium bonded clays and reopens soil, restoring passages air and water. It also has the benefit of dispersing greases and scums that clog the soil.

5. **Water softeners** can also damage your system by putting too much water through the septic system. Choose systems that backflush “on demand” rather than timer

and ask about septic compatibility for the softening agents or discharge separately.

6. **Insects** Mosquitoes and flies can be a problem if they enter and breed in a septic tank. Strangely, this is not often mentioned in literature on the subject. Mosquitoes and flies can enter through the plumbing vent of the house, go down through the 4-inch drain pipe and through the inlet tee to the tank. They can then breed in the tank and travel via the same route, reversed, to the outside world. You can cover the top of the vent with a capper of stainless steel screen. Another place for mosquito entry can be tanks with wood or fiberglass risers; here the manhole covers can be sealed with roof patch or a plastic sheet over the lids, then covered with a few shovelfuls of sand.

Some useful links for more information:

<http://extension.umd.edu/environment/water/files/septic.html>

http://en.wikipedia.org/wiki/Preventive_maintenance

<http://www.amerisep.com/>

http://www.epa.gov/owm/septic/pubs/homeowner_guide_long.pdf

<http://pubs.ext.vt.edu/448/448-407/448-407.pdf>

http://homebuying.about.com/cs/septicystems/a/septic_care.htm

About Septic Tanks and Septic Systems

Information About Private Waste Removal Systems at Your Home

I sometimes work with home buyers who are reluctant to consider a house that is not connected to a community sewer. Some have heard horror stories about problems with old-fashioned septic systems. Others are totally unfamiliar with the concept of private waste removal.

Although you should inspect them prior to purchase, most modern septic systems function in a clean and efficient manner now that regulatory agencies closely monitor their design and installation.

What is a Septic System?

A septic system processes and neutralizes liquid and solid waste that exits your home from stools, sinks and other plumbing fixtures.

A conventional septic system consists of three main parts:

- Septic tank
- Drainfield
- Soil beneath the drainfield

The Septic Tank

- A temporary, watertight holding tank for waste, often buried near the house. Tanks usually have a capacity of 1,000 or more gallons.
- Solids settle to the bottom of the tank and form a layer of sludge.
- Liquid waste exits near the top of the tank and flows through distribution pipes in the drainfield.

Septic Drainfield

- Multiple, gravel-lined trenches, usually 2-3 feet deep, where liquid that exits the tank flows. The drainfield is positioned so that gravity allows liquid waste to flow and become distributed into the area.
- Perforated distribution pipes are placed in drainfield trenches, ensuring that liquid waste can drain over a large area. The bottoms of the trenches are at least 12 inches above the groundwater table, sometimes more depending on the type of soil, so that waste is neutralized before entering.
- The drainfield is covered with soil before the system is used.

Soil

- Natural components of soil neutralize bacteria and chemicals before they reach groundwater or nearby rivers and lakes. The ideal soil is aerobic, meaning it contains a good amount of cleansing oxygen, and is not saturated with water.

Septic System Variations

Some septic systems are more expensive than the one described above, but they allow you to build on a piece of land that might not be suitable for a conventional septic system. For instance, waste might need to be pumped to the drainfield, rather than entering it from a gravitational drain.

If You're Buying Land

Always make your purchase of an undeveloped piece of land without sewer connections contingent on obtaining a permit to install a septic system. There are some soils that are not suitable for any type of system.

Ask your real estate agent which government agency regulates systems in the area where you plan to build. If you are purchasing a house already on a septic system, ask for a copy of the original septic permit, since it should show you the location of the tank and drainfield.

Ask your home inspector about specific septic system tests that can be performed during your home inspection.

Septic Tank & Septic System Maintenance

http://www.laundry-alternative.com/septic_system_maintenance.htm



When you buy a car, you are given an owner's manual with instructions on how to care for your car. Septic systems can cost as much or more than a car, unfortunately nobody gives you a manual when they are installed. Some people don't even know they have a septic system! As a result, many septic systems fail unnecessarily.

The Price for Failure is Steep

The price for failure is steep in two ways. More than 1200 people in the US die each year from contaminated water, and failing [septic systems](#) are a leading source of waterborne disease outbreaks in the country today. In a 2000 EPA report, 31 states listed septic systems as their second greatest potential source of groundwater contamination. Septic system replacement is also very expensive, with costs often running from \$5,000 to \$20,000 or more. Fortunately, there are some highly effective, ineffective steps you can take to eliminate this problem. Before discussing solutions, let's look at why septic systems fail.

[Septic system maintenance](#) is actually pretty easy to understand. When a system fails, the tank itself doesn't fail- the drainfield soil fails. In most cases the soil fails when it gets plugged up with solids and won't allow liquid to pass through it. For example, it can get plugged with solids from the tank if the tank hasn't been pumped, or with lint from a washing machine. Now for your solutions:



1. Use a washing machine filter.

Did you know that washing machines are a leading cause of [septic system](#) failure? The primary culprit is lint generated by washing machines, which clogs the soil in drain fields. Did you know that a typical family washing machine produces enough lint each year to carpet and entire living room floor! Lint screens and nylon traps found in hardware stores trap 5% or less of these particles. Because they are so light and small, the lint particles do not settle out in the septic tank. Instead, they stay in suspension and are flushed out to the drain field, where they plug up the pores of the soil bed.

To compound the problem, much of our clothing is now manufactured with synthetic materials such as polyester and nylon. These substances are not biodegradable, and will not break down in a septic system. Instead, they accumulate and plug the soil. Once these materials enter the soil, there is no way to remove them.

The good news is that lint can be prevented from entering the septic system through the use of a reusable, inline filter which attaches to your washing machine discharge hose. The filter, called the [Filtrol 160](#), retails for \$139.95.

2. Avoid Excessive Water Use

You can also damage your septic system by doing a large number of laundry loads in a short period of time. In standard septic systems, solid materials settle in the tank, while effluent flows out into the ground. If you put more water into the system than it is built to handle, the high volume of water will flood your system, and can also stir up and flush solids out of the tank into the drain field (in fact, septic pumpers use water from their hoses to help break up solids in your tank before pumping them out). A typical washing machine can use up to 60 gallons of water per wash load. On a heavy day you can easily put 400, 500 or 600 gallons of water through the system in a few hours. The solution is to spread out your water use. Do one or two loads of laundry per day, rather than 10-12 loads on Saturday morning. Water softeners can also damage your system by putting too much water through the septic system. These devices can put several hundred gallons of water down the drain every week, water that is not contaminated and does not need to go through the treatment process.

There are a couple solutions to this problem. You can upgrade your softener with a newer efficient model that uses less water and regenerates on demand, instead of a timer system that regenerates whether you use water or not. You can also install a mini septic system for your water softener.

3. Prevent Solids from Leaving the Tank

First of all, you should get your tank pumped on a regular basis to prevent excessive accumulation of solids in the tank. Under normal conditions, you should have the tank inspected and pumped every 1-3 years. Very important: tanks should be pumped and inspected through the manhole cover, not the inspection pipe. Your septic contractor should also install an effluent filter in the exit baffle of the tank. Effluent filters stop the larger solids from getting out to the drainfield. They are cleaned out every few years when you have your tank pumped. They are usually only about \$80. Effluent filters are cheap insurance and along with a washing machine filter, one of the best things you can do to protect your system.

4. Use of Household Cleaning Products

Excessive use of these products can contribute to septic system failure. If you do over 5 loads a week containing bleach, problems could arise. Avoid powdered detergents as they contain plastic fillers that can plug up your lines and drain field. Also, be careful with harsh automatic toilet bowl cleaners, which have put quite a few systems out of commission.

5. Should I Use a Separate System for My Washing Machine?

Some people say you should use a separate system for your washing machine, called a laundry interceptor. However, this is not necessary and in fact undesirable. Washing machines should discharge into the regular system because it actually works better than discharging into its own system. In order to work, septic systems require bacteria colonies which break down biodegradable matter. These bacteria require "food" which is found in our wastewater, but not in detergent. Without "food" these bacteria colonies die out and the system fails. Many people who have installed these systems have found this out the hard way. A research project conducted in

several east coast states utilized some rather high tech systems for washing machine discharge and many began failing in as little as eight months.

Maintenance Tips:

Do: divert surface runoff water from roofs, patios, driveways and other areas away from your drainfield.

Have your septic tank pumped regularly. It should also be inspected for leaks, cracks and to make sure the exit baffle is in place.

Install lint and effluent filters.

Spread out your laundry loads.

Compost your garbage or put it in the trash

Don't:

Use a garbage disposal.

These appliances normally double the amount of solids added to the tank!

Flush sanitary napkins, disposable diapers or other non-biodegradable products into your system.

Dump solvents, oils, paint thinners, disinfectants, pesticides or poisons down the drain as they can disrupt the treatment process and contaminate the groundwater.

Dig in your drainfield or build anything over it.

Drive over your drainfield or compact the soil in any way.

Plant trees or shrubbery close to the septic system, because the roots can get in the lines and plug them. Grass is the only thing that should be planted on or near a drainfield.

If Your System Fails

In quite a few cases, a tune-up can fix your system and you can avoid the high costs of replacing the system. This tuneup includes properly pumping the tank, cleaning (jetting) the drainfield lines, and installing washing machine and effluent filters. If these measures are not sufficient, some failed systems can be rejuvenated by fracturing the soil. This process utilizes a hollow tube inserted into the soil, then a 300 pound blast of air is injected into the soil creating thousands of tiny fissures. These fissures allow the drainfield to drain, creating an oxygen atmosphere and the aerobic bacterial colonies to repopulate. Aerobic bacteria, which require oxygen, typically live in the top 26 inches of the drainfield and process waste much more quickly than anaerobic bacteria. This process can be performed in a matter of hours with no digging or damage to the yard. One company which performs this service is Terralift International (<http://www.terraliftinternational.com>).

If you have a clay soil which has become plugged due to sodium from wastewater binding with the clay, Septic Seep can help. This product releases sodium bonded clays and reopens soil, restoring passages air and water. It also has the benefit of dispersing greases and scums that clog the soil.

Chapter 5

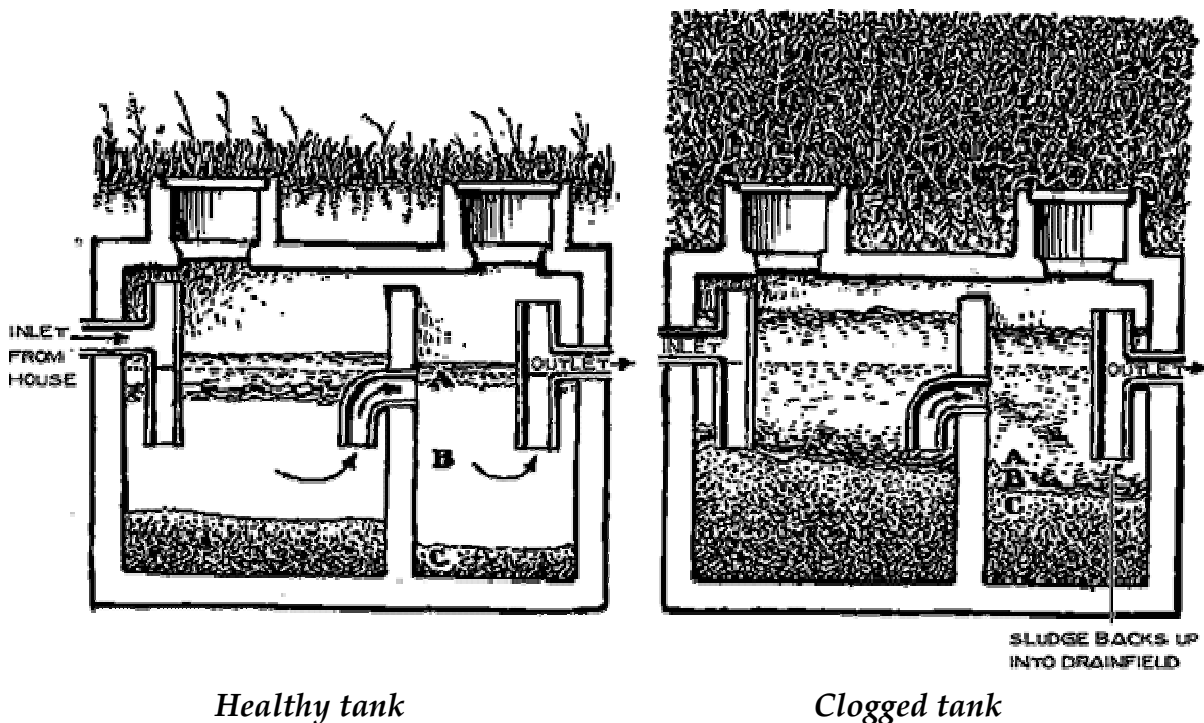
Septic System Maintenance

from *The Septic System Owner's Manual*

http://www.shelterpub.com/_shelter/ssom-maintenance.html

In the last chapter we talked about what goes down the drain. Here we're going to cover long-term periodic maintenance, which consists mainly of septic tank inspection and pumping when necessary. We'll also discuss drainfield inspection.

People often say, "Oh, I've never had to pump my tank," as if that were proof that their septic system works fine. But be aware, failure to pump tanks is (next to improper siting and design) perhaps the greatest single cause of septic system failure. Here's what can happen:



Healthy tank

Clogged tank

A. Scum at top: cooking fats, oils, grease, soap scum, other floatables

B. Liquids in middle

C. Sludge at bottom: solids heavier than water and what is left over after solids have been partially eaten by bacteria. Once sludge gets up to outlet pipe, it enters and clogs drainfield.

Drainfield Failure

After several years of use, a build-up of bottom sludge and floating scum will reduce the effective capacity of the tank, as shown in the "clogged tank" illustration on page 48.

This means waste passes through the tank too fast, and solids eventually plug the pipes in the drainfield. The microorganisms in the drainfield no longer have an aerobic (with air) environment in which to perform their cleansing action; they are now struggling to survive in an anaerobic (without air) environment. Either untreated effluent begins surfacing on the ground or sewage backs up into house drains. At this point, the system has *failed*, and a new drainfield is required — expensive!

THE MOST IMPORTANT SINGLE THING A HOMEOWNER CAN DO IS TO AVOID PLUGGING OF THE DRAINFIELD. AN EXCELLENT AID IN DOING THIS IS AN EFFLUENT FILTER (SEE P. 9 AND P. 174).

Inspection and Pumping

Inspect the Tank

How can you avoid drainfield failure? Inspect the tank at regular intervals and pump when necessary. In many parts of the country, it is recommended that tanks be pumped every three to five years, but recent studies indicate that a functioning tank, without abuse, may only need pumping every 10 to 12 years. Since there are many variables, we recommend an inspection every three to five years and basing pump-outs on inspections. As the years pass, you should be able to see the pattern of sludge and scum accumulation.

Keep a Record

Use a file folder (or get your wastewater district to get the [Homeowner's Septic System Guide](#) shown on page 180) to keep a record of inspections and dates when the tank has been pumped.)

What Is Pumping?

Septic tanks are pumped by a licensed pumper with a vacuum tank truck. The pumper will use a 4-to-6-inch-diameter hose and vacuum everything out of the tank (both solids and liquids).

Waste pumped from a septic tank is called septage. It is approximately 5% solids and 95% water. (Raw sewage is 1% solids and 99% water.) The septage waste must be taken to a licensed disposal site because of the potential health problems with contamination. In many rural areas, private companies have developed septage disposal sites — generally evaporation ponds. In other communities, there may be a centrally located sewage plant that can handle the septage waste.

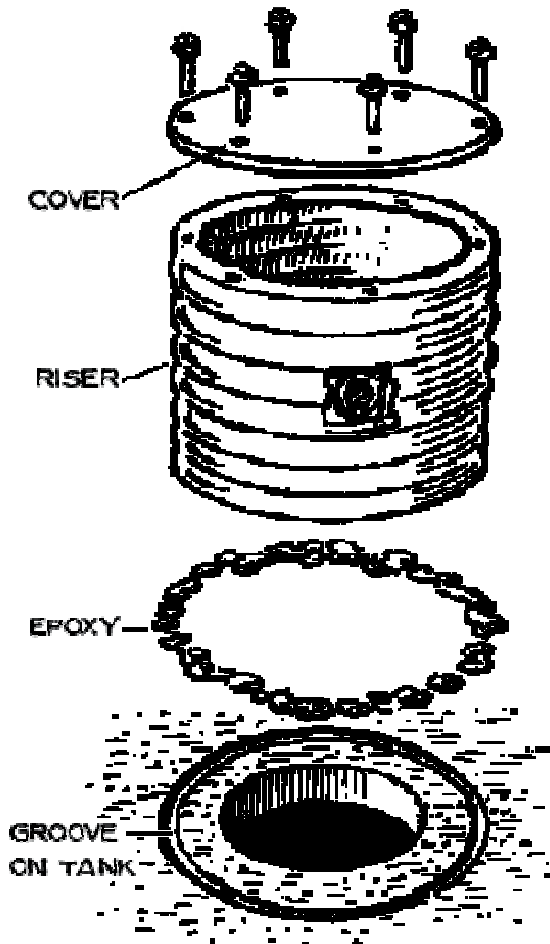


Where Is It?

Locating the Tank

You can save some money by locating the tank yourself and digging up the manhole covers. If the tank has no risers over inspection holes, and no diagram is available showing the location, you will have to probe for the tank, as follows: Use a long metal rod ([1/2-inch rebar](#), bent over 90° to make a handle at the top) and begin probing where the main drain pipe leaves the house. Push the rod firmly down into the soil until you “feel” the drain pipe. Use a firm and steady push. Don’t punch or pound the rod as you can damage the pipe, particularly the pipe/septic tank connection. If the soil is too hard and dry for probing, try soaking the area with a garden hose.

Another method: There may be lush growth over the drainfield. Then the tank will be in an obvious place between the house drain and the drainfield. Or, you can run a snake down the clean-out to the tank and locate it with a metal detector.



Detail for retrofitting a riser on an existing tank

Know Where Thy Tank Lieth!

B & M Contractors, of Bolinas, Calif., tells the story of some people who added a kids' bedroom to their house without checking the location of the septic tank. All went well until one day, the system failed and it was then discovered that the room had been built over the tank. To get to it, the pumpers had to pull back the rug, cut a hole in the floor, run their suction hose into the room through a window, and pump out the tank. Yuck!

When you find the drain pipe at one spot, move a little further from the house and probe again. Continue along the path of the drain pipe until you locate the tank. The tank will probably be 1 to 3 feet underground and at least 5 feet from the building. Once you locate it, dig up both manhole covers. Or, if you're lucky, the tank will have risers with sealed caps instead of the very heavy manhole covers of earlier models. If you plan to inspect your own system and don't have these risers (*see p. 6*), we recommend that you have them installed. In addition to providing easy access for inspection, they keep out dirt and rainwater. In the meantime, use a rope through the metal handles on the concrete manhole covers to swing them up and off the tank. The tank is now ready for inspection and/or pumping.

Note: Once you locate your tank, make a diagram of where it is for future reference, indicating number of feet from a particular point of the house.

Tank Inspection

Checking It Out

You can save money by doing your own inspections. This way you will only call the pumper when needed. Inspection is done from above, by looking in through the manholes. Look around inside with a flashlight and perhaps even a hand mirror attached to a long pole. When checking tanks be sure to wear gloves and to wash your hands thoroughly with an anti-bacterial soap afterwards.

However, if you've had no experience, it's hard to know what to look for. If you intend to make your own inspections, we suggest you have the pumper come out the first time and that you watch how s/he performs the inspection. Ask questions. Then, the next time you should be able to do it yourself.

WARNING: BE VERY CAREFUL AROUND SEPTIC TANKS. THE FUMES CAN KNOCK YOU OUT. FALLING INTO A SEPTIC TANK CAN BE FATAL. NEVER ENTER A TANK. FOR A SUMMARY OF SEPTIC SAFETY, SEE www.inspect-NY.com/septic/septicsafety.htm

What to Look For

Once the tank is open, here's what to look for (assuming the tank has two compartments):

Inlet Chamber

- 1.

A COOL SLUDGE/SCUM TOOL

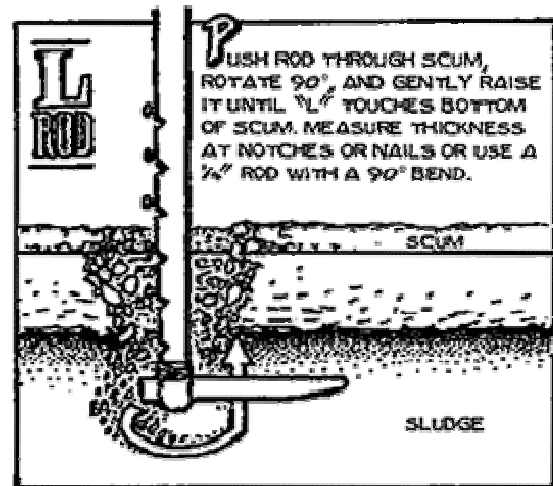
GET A 1-INCH CLEAR PLASTIC TUBE, 5 TO 6 FEET LONG. SLOWLY PUSH THE TUBE TO THE BOTTOM OF THE TANK, THEN COVER THE TOP WITH YOUR THUMB AND REMOVE CAREFULLY. WIPE THE TUBE OFF, AND YOU SHOULD BE ABLE TO SEE A PROFILE OF YOUR TANK, INCLUDING SLUDGE, CLEAR EFFLUENT, AND SCUM.

2. **Odor:** Odors should not be too obnoxious when you open the inlet side. (Odors will be a lot stronger when you stir the contents.)

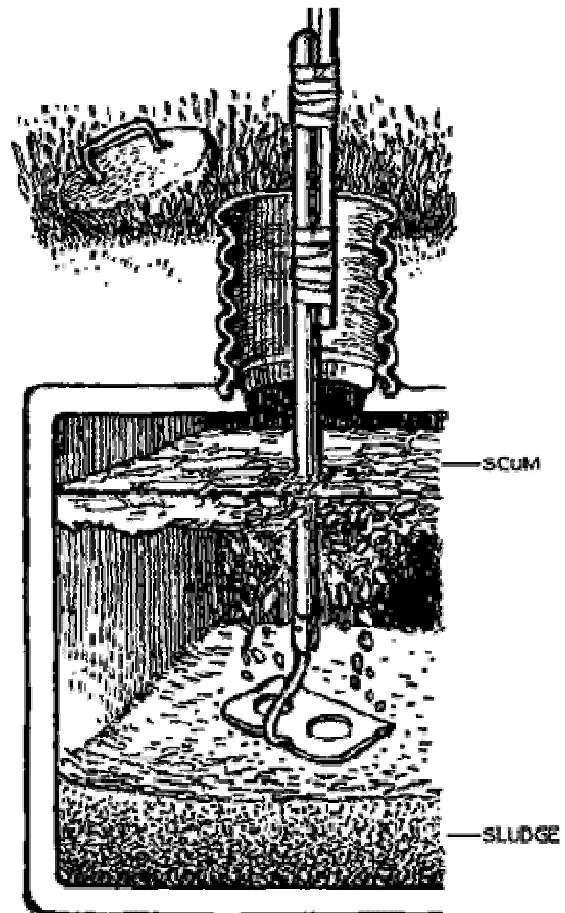
3. **Insects:** There should not be too many flies or flying insects present.

4. **Scum:** Should be firm, with a crust, but not solid. It should be like pudding, a medium brown color, and 3 to 4 inches deep. By poking a stick through the scum, you can estimate the average thickness. Or, you can fashion an "L-rod," as shown at the top right. You can figure on there being equal amounts of scum above and below the water line.) Tip: Sometimes you can use a hose with high pressure to squirt a hole in the scum big enough to estimate its thickness.

5. **Sludge:** You can use a long stick, but best is a concrete hoe (the type with two holes is best) and an extension handle wired or taped on. As you lower the hoe, it's a little tricky is to tell when you first hit the sludge. Thus, proceed



Homemade scum measuring device



Homemade sludge-measuring device

You can use hoe to measure depth to sludge, then a rod to measure depth of sludge.

slowly. If you feel resistance halfway to the bottom, it needs pumping.

6. **Inlet tee:** Concrete tees deteriorate. Be sure to check this.

Outlet Chamber

1. **Scum:** In a two-compartment tank, there should be little, if any, scum on the effluent side — the effluent should appear relatively clear. If there is much scum here (more than 2 inches), the tank needs pumping. If either scum or sludge is floating out the outlet, the tank needs pumping. In a one-compartment tank, a rule of thumb is that the tank should be pumped when the sludge is 20 inches and the scum is 10 inches.
2. **Outlet tee:** If the inside of this tee is clogged, the tank is flooding, and this could indicate trouble with the drainfield. If the top is dry, it's a good sign, since a wet top would indicate the tank is flooding. If the tank is flooding, there is no air at the top of the tank, and this anaerobic condition can result in tank deterioration.
3. **Outlet tee deterioration:** A concrete or ceramic outlet tee in a tank can deteriorate above the water line due to sulfuric acid. This is easy to replace with a plastic tee and should be inspected periodically.
4. **Baffle wall deterioration:** The baffle wall between the two chambers can deteriorate as well. Consider putting an effluent screen in place rather than trying to repair the baffle wall, or replace the tank. A local septic tank inspector mentioned an owner who went into his tank to repair a baffle wall and was sick for over a year as a result. In Oregon, for example, most new tanks are now one chamber with an effluent screen. Cost for installing a screen might be \$200 to \$300. (See pp. 8–9.)

Insects

Mosquitoes and flies can be a problem if they enter and breed in a septic tank. Strangely, this is not often mentioned in literature on the subject. Mosquitoes and flies can enter through the plumbing vent of the house, go down through the 4-inch drain pipe and through the inlet tee

outside world. You can cover the top of the vent with a cap of stainless steel screen. Another place for mosquito entry can be tanks with wood or fiberglass risers; here the manhole covers can be sealed with roof patch or a plastic sheet over the lids, then covered with a few shovelfuls of sand.

If the Tank Needs Pumping

Try to be there when the pumping is done. Lean over the shoulder of the pumper and make sure the tank is pumped completely. We heard about one company that pumped only the liquids and no solids. As the tank is pumped, it should be cleaned out as thoroughly as possible with a hose. There will be plenty of bacteria left to reactivate the system even when the tank is thoroughly cleaned.

It is difficult to suck out the bottom 2 to 3 inches of sludge, particularly if it contains a lot of sand. The pumper should hose down the sludge on the bottom when it is exposed so that it will partially liquefy and can then be sucked out. A high-pressure squirter, not a thumb applied to the hose, should be used.

Drainfield Inspection

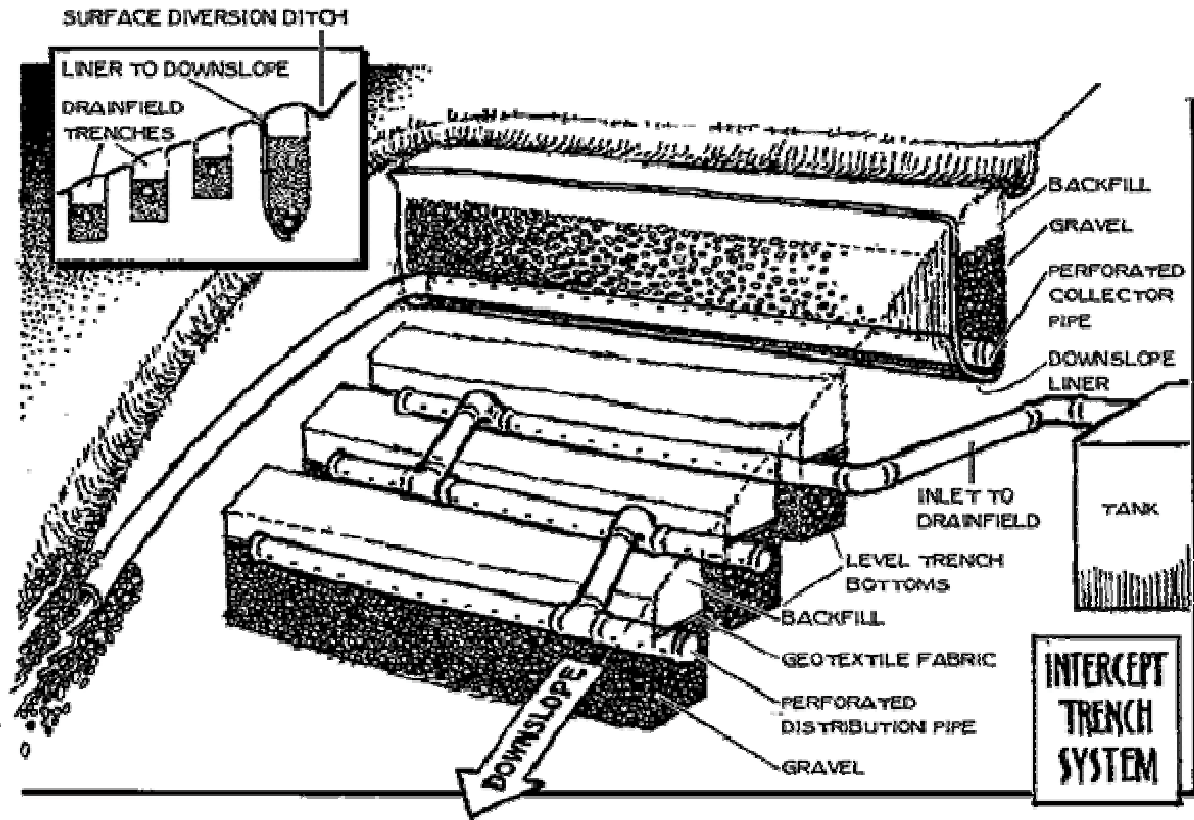
If the drainfield was properly designed and installed (and the tank functions properly), it should be mostly maintenance-free. However, here are some tips.

Drainfield Test

Lush plant growth over the drainfields (or tank) may be a sign of sewage surfacing. Here's one way to check the drainfield's absorption capacity: run 40 to 80 gallons of water into the tank and, with the outlet riser open, watch how long it takes to drain into the drainfield. A slight back-up from the normal tank water level (the bottom of outlet pipe) is OK. The water level may rise 6 to 1 inch, but if the field is unclogged (and not flooded), a fully-flooded tank should drop to normal in five to ten minutes.

The "French Drain"

If the original installation didn't allow for good drainage of surface waters (rain or run-off) around the drainfield, drainage ditches (with proper setbacks from the drainfield) may be needed. Also, a high water table in winter and/or dense soil can cause effluent to surface, causing bad odors and a possible health hazard.



Roots

Trees or shrubs with aggressive, water-seeking roots growing near the drainfield can cause real problems in conventional drainfields. The roots will seek out water, and can run inside the drainfield pipes and choke off the flow of effluent. Willow roots are notorious drainfield invaders.

Dual Drainfields

If you have a dual drainfield with a diverter valve, rotate the valve to the alternate field every six months or year. (See p. 20.) This allows the trenches to dry out and rejuvenate.

Soil Compaction

Be sure no one parks cars over the drainfield. It will compact the soil and reduce the aerobic capacity of the drainfield. Also, be sure cars don't drive over the inlet and outlet pipes to the septic tank. This can snap the pipes and even cause the tank itself to crack.

Pump Maintenance

For mounds, sand filters, STEP systems, and lift systems for gravity drainage fields:

- Run the pump through its cycle periodically to make sure there are no leaking pipes.
- Pumps should have alarms.
- Pumps should have check valves. Note: in areas of severely cold weather, check valves can be detrimental to proper pump operation.

Keep Those Hands Clean!

Just as you can pick up a cold or the flu by getting germs on your hands and then touching your hands to your nose, you can pick up some much nastier organisms if you have manual contact with an open tank or drainfield. If you're going to do your own inspection or repairs, wear gloves and wash your hands scrupulously afterwards.

Never Been Pumped

The fallacy: You often hear a homeowner say, "Oh, I've never had to pump my tank."

The irony: Typically, the homeowner has never had any septic system problems and thinks this means nothing need be done.

The remedy: Just as you need to check the oil level in your car so it doesn't get too low, you need to periodically check the solids level in your tank so it doesn't get too high.

POLITICAL PUMPING

ONE HOMEOWNER IN OLYMPIA, WASHINGTON HAS A SIMPLE REMINDER TO PUMP HIS TANK. HE PUMPS IT OUT EVERY YEAR THERE IS A PRESIDENTIAL ELECTION

Summary

- Sludge and scum accumulate in every septic tank. How much and how fast depend upon a number of conditions.
- You can save money by locating the tank yourself and inspecting scum and sludge levels to determine when pumping is necessary. (However, there is a learning curve.)
- Inspect your tank every three to five years until you determine the inspection frequency required for the future.
- Scum and sludge must be pumped on a regular basis or system failure can result.
- Drainfield operation can be maximized by checking the tank's outlet tee, by testing the drainfield's absorptive capacity (*see pp. 52–53*), by ensuring good drainage, and by avoiding soil compaction.

OUT OF SIGHT, BUT IN YOUR MIND!