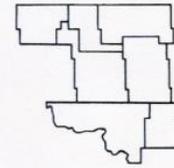




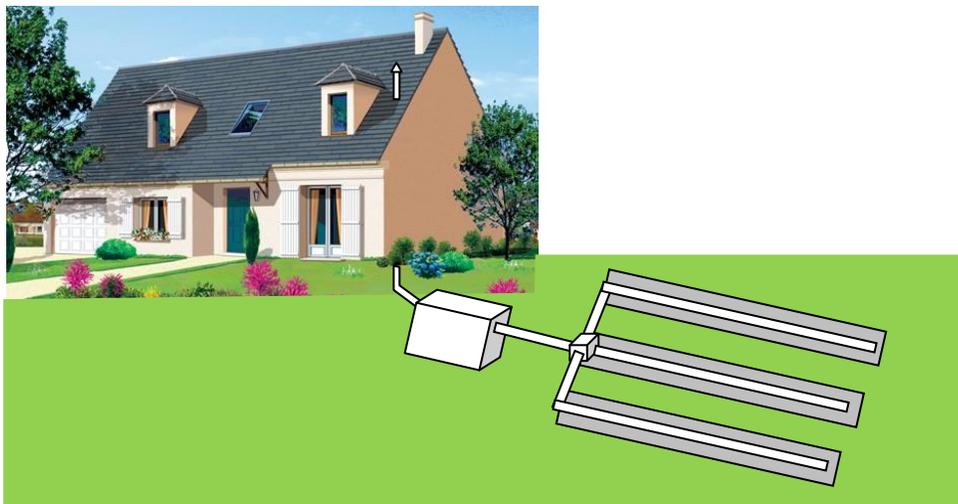
First District Health Unit



www.fdhuh.org

A Homeowner's Guide to Septic Systems

By Helder D Kusch



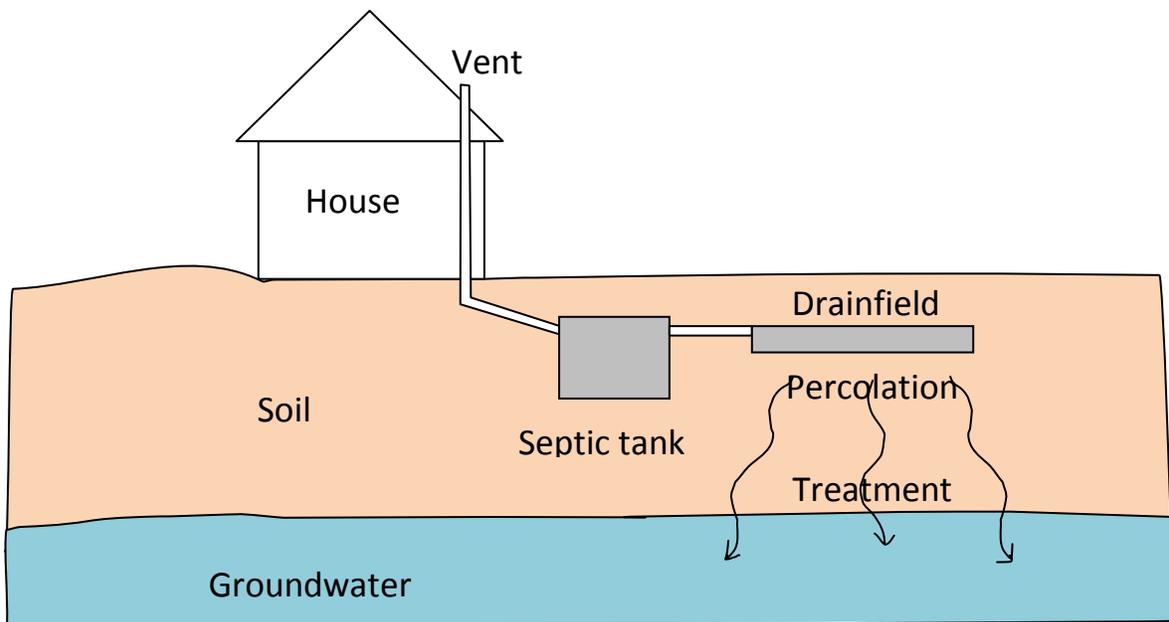
First District Health Unit
801 11th Ave. SW
P.O. Box 1268
Minot ND 58702
Phone 701-852-1376
Fax 701-852-5043

Congratulations! You just became a wastewater treatment plant operator. You are now responsible to maintain and inspect your septic system periodically.

This folder will help you to understand how your system works and give you advice on good operation and maintenance practices. As a result, you will extend the performance and the life of your system and help to protect the groundwater and the quality of your neighborhood.

How does a septic system work?

A septic system uses natural processes to treat and dispose of the wastewater from your home. It is typically composed of two major components: a septic tank and a leachfield. An onsite wastewater system will take care of your blackwater (toilet waste), and greywater (shower, laundry and sink waste). The septic system is not designed to dispose of water from the floor drain, roof gutter, softener and other “clean” water.

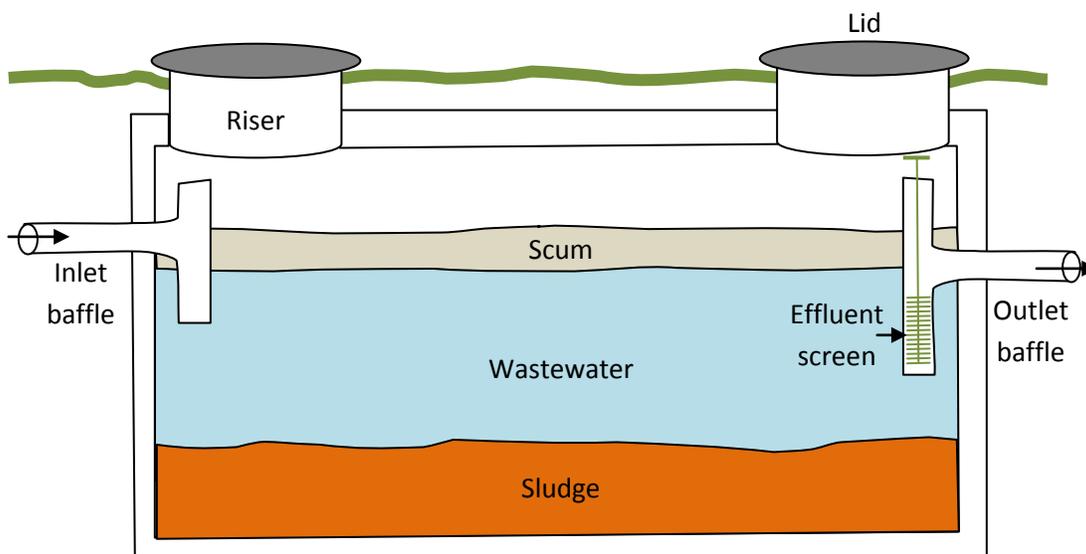


The Septic Tank

The septic tank is the first step of the treatment. This component will receive the raw sewage from the household. This tank should be big enough to allow the wastewater to be retained at least 36 hours. During this time, bacteria will break down the solids and produce toxic gases. These gases will travel out through the plumbing vent. The raw water will be separated by density in 3 layers:

1. The heaviest layer, the sludge will settle on the bottom of the tank
2. The wastewater will be above the sludge
3. The lightest layer, referred as the scum, which contains greases, fats and hair, will float above the wastewater

Only the liquid layer should move to the drainfield.



The scum and the sludge should be pumped regularly. First District Health Unit recommends pumping your tank at least every 3 years for normal use.

Pumping the tank is the most important thing you must do to protect your system. If the tank is not pumped regularly, sludge will continue to build up to the point where solids will move to the drainfield and clog your dispersal. This can result in the failure of the drainfield and the necessity to install a new system.

The Drainfield

Once the raw wastewater gets separated, the liquid layer will travel to the drainfield. The drainfield (also called dispersal area or leachfield) is the most important and most sensitive part of your septic system, but it is also the component needing the least maintenance. Simplified, the drainfield is where your wastewater will be infiltrated. Through the soil, the water will be treated by filtration and biological processes (microorganism). In a properly functioning system, the water will be reaching the underground water in a completely clean state.

Different leachfields exist according to the available room, the quality of the soil, the topography, the compaction rate and the depth of the saturated layer. You can find the different types of drainfields on the First District Health Unit website at www.fduh.org. A pump may be installed if the outlet baffle is deeper than the maximum depth of the drainfield.

An inspection port may be present for newer system. These devices are really useful because, by looking into the riser, we can see the level of the wastewater in your leachfield, and how well it is working. If the leachfield is full and doesn't go down, this can be a sign of failure or overloading.



How to maintain and increase the life of your septic system

A septic system has to be maintained. A septic system without maintenance is a system that fails. When a system fails, there is very little you can do except install a new drainfield which is very expensive. Also, the water from a failing system doesn't receive enough treatment and will then contribute to the pollution of the groundwater.

Inspect and pump frequently

The septic tank is accumulating sludge and scum. Too much accumulation will allow solids to go to your drainfield and clog your system. Again, this is why the tank should be frequently pumped (at least every 3 years).



Garbage disposal, hot-tub, whirlpool and other water use appliances affect this frequency.

Make sure to hire a licensed contractor and to notify him of the type of system that you have (i.e. septic tank with effluent filter and a pump tank). Most of the pumpers will put you on a schedule for a periodic pumping.

Another method of determining whether or not your tank should be pumped is to physically measure the thickness of every layer. The steps are explained at the First District Health Unit website at www.fdh.u.org.

A filter can be installed in the outlet baffle to limit the crossing of the solid matter. Clean the device during each year's annual inspection of your septic tank. This can be done by removing the filter and cleaning it using your garden hose. Rubber gloves should be worn for protection and hands washed with warm soapy water following any servicing of your septic tank.



It's very important that you keep track of any inspection or pumping of your system. The back page is dedicated for this use (p9).

Be careful what you are flushing

An onsite septic system uses microorganisms to treat your wastewater. Some products can harm them. Do not flush chemical compounds into your system, they can kill the bacteria and also pollute the underground water. Also, some materials cannot be digested by microorganisms such as paper, diapers, cigarette butts, etc. these materials can physically plug some part of your system.

A lot of products claim to help your septic system work better. These products usually do not help. Some contain chemicals that can hurt your system. You don't need additives; you already have all the required microorganisms.

Saving water

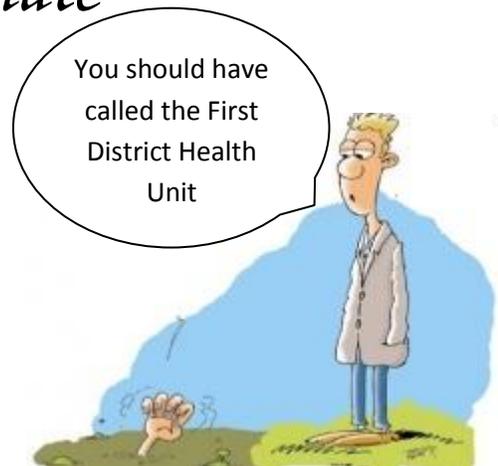
Use water wisely! Water conservation is an important factor. Conserve the performance of your septic system and it will last longer. Make sure that you don't have any leaks. Leaky toilets can waste as much as 100 gallons of water each day.



You can also choose High efficiency toilets and showers or replace your old appliances. Most older homes have a toilet with a 3.5-5 gallon reservoir, when newer efficiency toilets use 1.6 gallons or less per flush. High efficiency washing machines use 35 to 50 percent less water than standard model. Toilets and laundry make up 65% of your consumption of water.

Don't wait until the last minute

Your system can be on the way to fail but can be fixed if the problem is detected early enough. A system that has failed cannot be fixed, so pay attention to details. You can suspect a failure when an odor is emitted; but also with some physical evidence like a wet area on your property, or ice formation during the winter. By the time you can see or smell the problem, the damage may already be done.



Premature indicators of a system failure include water backing up in the house or slow flushing. Gurgle from your drain can also be the beginning of some problems.

If you think you have a problem, you can call the First District Health Unit at (701)-852-1376. You can also call for advice from onsite sewer professionals. A list of our licensed contractors can be found on our website at www.fdhu.org. **No major repair** can be done without the approval of the First District Health Unit (size extension of the drainfield, replacement of the tank, etc.). If you are upgrading your house, you should also contact FDHU, as an extension of your sewer system may be needed. You can call FDHU and a specialist will tell you how to get started on the permit process.

The Unforgettable

What you have to Do:

- Do learn the location of your septic system. A sketch can be drawn on p9. Keep the septic tank cover accessible for inspections and pumping. Install risers if necessary.
- Do have your tank pumped regularly (at least every 3 years) by a licensed septic hauler. Keep a record of the pumping, inspection and any other maintenance activities.
- Do conserve water to reduce the amount that must be treated. Repair any leaking faucet and toilets. Space out use of washing machine and dishwasher, and run them only when full.
- Do call a professional when you have problems. Your system can be saved if problems are diagnosed and fixed early.
- Do contact the First District Health Unit if you plan on upgrading your house.



What you Don't do

- Don't drive or park over the septic tank or the drainfield.
- Don't use your septic system as a trash can. Don't flush sanitary napkins, tampons, diapers, condoms, or any other non bio-degradable products into your system.
- Don't dump grease, poison, pesticides, paints, or disinfectants down the drain: these compounds can kill the necessary bacteria and impact the treatment of your system.
- Don't dig in your drainfield or build anything over it. The drainfield should only be covered by grass.
- Don't make any repairs to your system without obtaining a permit from the First District Health Unit.
- Don't connect water softeners or any surface water (gutters, outdoors drain...) to your septic system. These waters are considered clean and should be disposed of in a different area.
- Don't go down in the septic tank. The treatment produces toxic gases which can kill someone in a confined space.



Sketch System Layout Here

Maintenance Record Log

Date	Action taken	Service provider	Notes