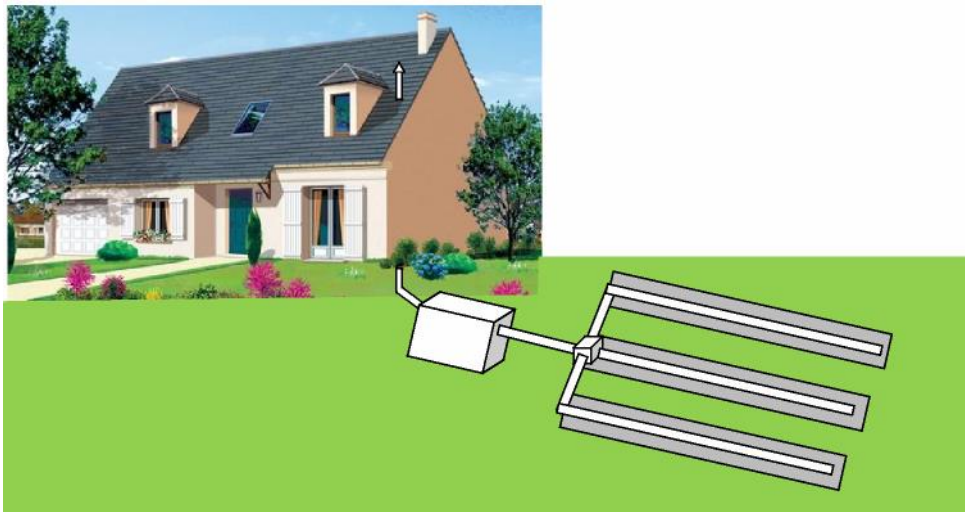


# *A Homeowner's Guide to Septic Systems*



**Upper Missouri District Health Unit**

**110 W. Broadway, Suite 101**

**Williston, ND 58801**

**Phone 701-774-6400**

**Fax 701-577-8536**

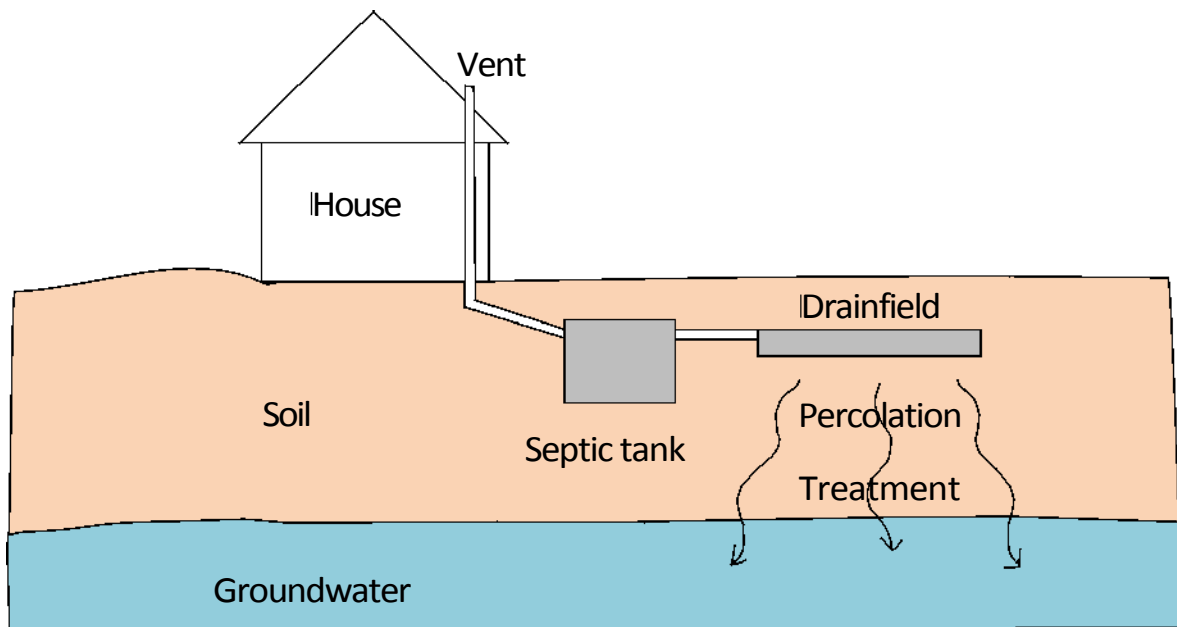
**Toll Free 877-572-3763**

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

This guide 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?

An onsite wastewater system, or 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 drainfield. 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.

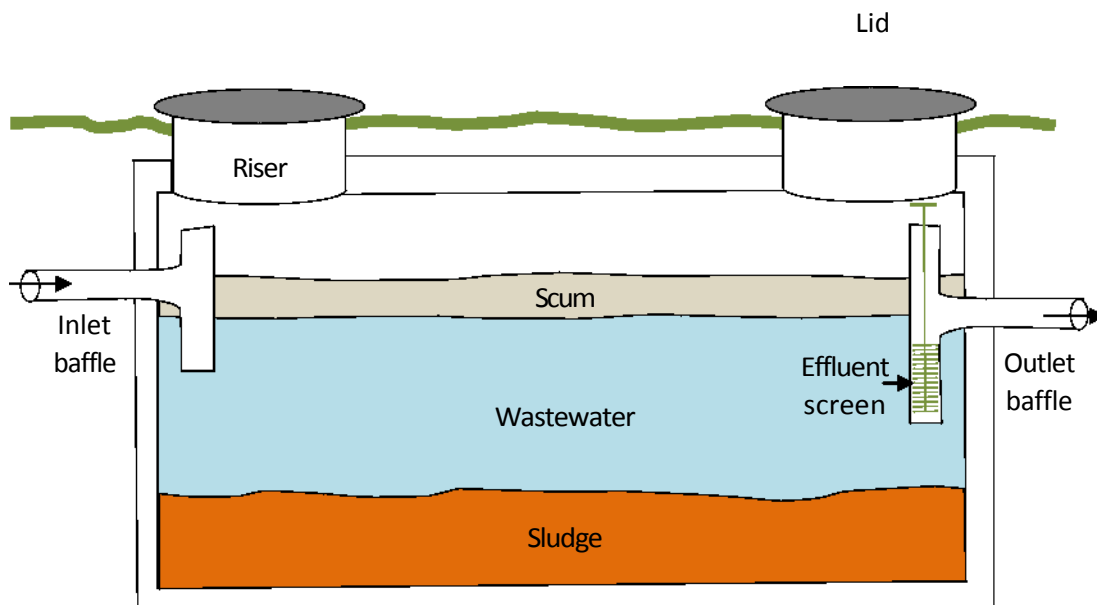


# The Septic Tank

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. Upper Missouri 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 area. 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 that needs 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 reach the underground water in a completely clean state.

Different drainfields exist according to the available room, the quality of the soil, the topography, the compaction rate and the depth of the saturated layer. 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 a newer system. These devices are really useful because, by looking into the riser, we can see the level of the wastewater in your drainfield, and how well it is working. If the drainfield 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 Septicsystem**

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 disposals, hot-tubs, whirlpools and other water use appliances affect this frequency. Make sure to hire a licensed contractor and notify him of the type of system you have. Most of the pumpers will put you on a schedule for a periodic pumping.

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 pumping of your system.

## **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. 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% less water than standard models. 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 failing, 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.

A list of our licensed contractors can be found on our website at [www.umdhu.org](http://www.umdhu.org). No major repair can be done without the approval of the Upper Missouri District Health Unit (size extension of the drainfield, replacement of the tank, etc.). If you are upgrading your house (for example adding bedrooms or living quarters), you should also contact UMDHU, as an extension of your sewer system will be needed. You can call UMDHU 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 page 9 of this guide. 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.**





## 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 Upper Missouri 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.**

