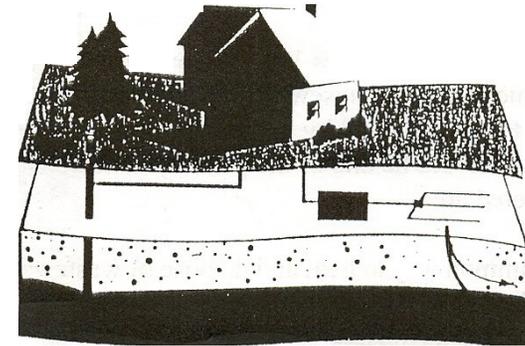


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# Home Buyer's Guide to Septic Systems & Private Water Wells

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**For More Information Please Contact:**

Knox County Health Department  
1361 W. Fremont St.  
Galesburg, IL 61401  
(309) 344-2224

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**Information Provided by:  
Knox County Health Department  
(309) 344-2224**

## Purpose of this Flyer

Frequently, prospective buyers of a home in a rural area have many questions regarding the sewage disposal system and water well serving the dwelling:

- ✓ What does the existing sewage disposal system consist of?
- ✓ Is it working properly?
- ✓ How long will it last?
- ✓ How much water can I use?
- ✓ What kind of well is it?
- ✓ Is the water safe?

The Knox County Health Department has developed this flyer to guide potential homeowners in making informed decisions regarding the purchase of a home with a private sewage disposal system and/or individual water well.

## Overview of Sewage Disposal Systems

One of the major differences between owning an unsewered versus a sewer home is that an unsewered wastewater treatment and disposal system must be maintained by the homeowner. Treatment and disposal of wastewater should be one of the primary concerns of any homeowner in an unsewered area.

The most common way to treat and dispose of wastewater in rural homes is through the use of an onsite disposal system. Also known as a septic system or private sewage treatment system.



## Alternative Systems

A sandfilter treatment system contains the same elements as a typical septic system except that the absorption field is a bed of sand through which the septic tank effluent filters. The water from these systems can be treated with chlorine and discharged onto the ground surface.

A mechanical aeration system typically consists of a motorized tank which allows for oxygen to be introduced for the aerobic bacteria present in the tank to live and consume the waste. The water from this system is also treated with chlorine and can be discharged onto the ground surface.

## System Care

The accumulated solids in the bottom of a septic tank should be pumped every two to five years to prolong the life of the system. Regular maintenance is a must for a sewage disposal system to work properly. Neglect or abuse of a septic system can cause it to fail in turn causing:

- a serious health threat to your family and neighbors,
- degradation of the environment,
- a reduction in the value of your property,
- expensive repairs,
- and thousands of water supply users to be at risk if you live in a public water supply watershed and fail to maintain your system.

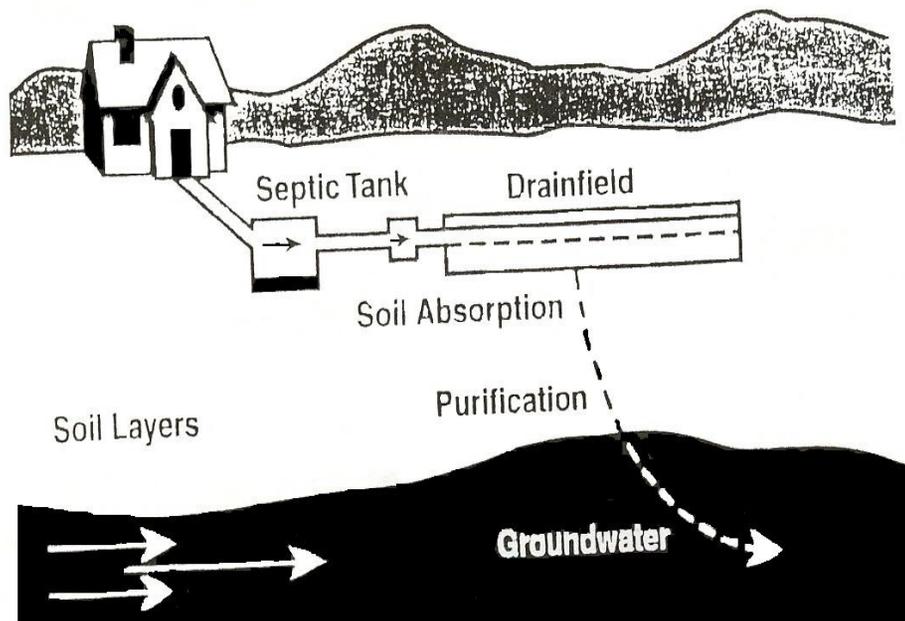
You should be alert to the signs of a failing system:

- sewage surfacing over the drainfield (especially after storms),
- sewage back-ups in the house,
- lush, green growth over the drainfield,
- slow draining toilets or drains,
- sewage odors in the home or yard.

The drainfield or soil absorption field provides the final step in the wastewater treatment process. A standard drainfield is a series of trenches, or a bed lined with gravel, which are typically located one to three feet below the ground surface. Perforated pipe or drain tile runs through the trenches to distribute the wastewater.

In a conventional sewage disposal system, the wastewater flows by gravity from the septic tank into the drainfield or to a distribution device, which helps to uniformly distribute the wastewater flow in the drainfield.

### Subsurface Absorption Field



### Where to Find Information Concerning Private Sewage Disposal Systems and Private Water Wells

Obtain as much information from the present homeowner as possible. They should be able to tell you:

- ✓ where the sewage disposal system and the private water well are located,
- ✓ what kind of sewage system or well it is,
- ✓ how long ago they were serviced,
- ✓ past performance of the systems,
- ✓ and if there have ever been any problems.

The next step is a site survey. Walk the property and see if you can detect any immediate problems such as:

- a sewage overflow,
- a foul odor from the septic system,
- lack of water,
- staining of clothing or fixtures,
- or an odor to the drinking water.

A final option would be to contact your local health department to inquire if records of your system exist.

It is recommended that anyone purchasing a home have an inspection of the water well and septic system serving the residence.

When buying a home served by a private water well and a private sewage disposal system, the fundamental question that should be answered is: "When the existing system fails, how will we repair it and how much will repairs cost?" Owning a home with these systems requires an understanding of what they involve and what must be done to maintain them.

## Overview of Individual Water Wells

The purpose of a private water well is to provide homes with potable water for everyday use. There are two key issues concerning a private water well:

1. Location: Proper location of the well reduces the possibility of contamination. Ideally the location should be on high ground, have good drainage, and be the proper distances from possible contamination sources, such as septic systems.
2. Construction: The well should be properly constructed to protect against contamination, such as surface water drainage.

## Testing of a Private Water Well

The Knox County Health Department recommends that homeowners test their well water on an annual basis to ensure the drinking water quality. Water bottles can be purchased from this Department for that sampling. The sample can be tested for the presence of coliform bacteria and nitrates; which are indicators of potential well contamination.

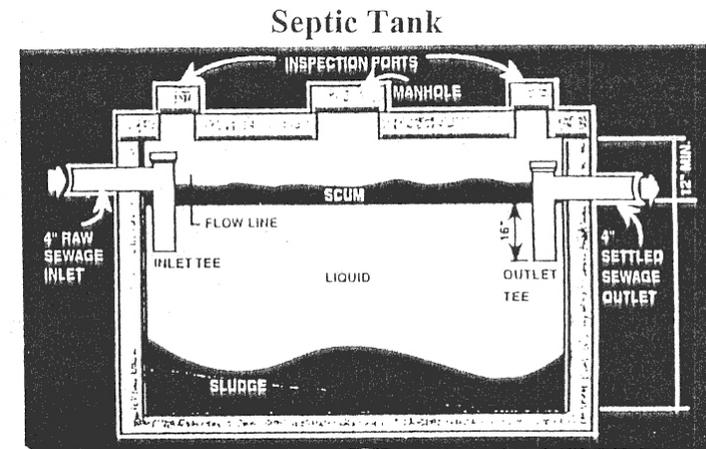
## A Reminder About Owning a Well

The most important thing to remember about having a well as a primary water supply, is that there are limits on the amount of water a home can utilize. Unlike a public water system, a well can cease to produce water. This depends upon the depth, recovery rate, and water level of the well. If your well has a fast recovery rate and a high water level, your chances of running the well dry are less than if the well is slow at recovering water and has a low water level. You should be aware of the limits and conserve as much water as possible, so that you don't have to face the possibility of no water if the well were to run dry.

## The Typical Septic System

The purpose of a home's private sewage disposal system is to dispose of the wastewater generated by the occupants in a manner that does not cause an adverse effect on the public health or the environment. A typical septic system consists of the following elements:

- ⇒ A sewer line that connects the home's plumbing to the septic tank.
- ⇒ A septic tank that allows for the settling of solids and provides the initial treatment of the sewage.
- ⇒ A soil absorption system which disperses the sewage effluent into the surrounding natural soils.



## How It Works

Household wastewater first flows into the septic tank where it should stay for at least a day. In the tank, heavy solids in the wastewater settle to the bottom forming a layer of sludge, and grease and light solids float to the top forming a layer of scum. The separated wastewater in the middle layer of the tank is pushed out into the drainfield as more wastewater enters the septic tank from the house.