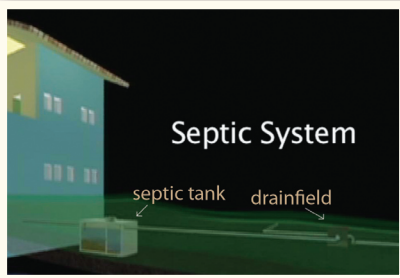


# PRIVATE SEPTIC SYSTEMS: no monthly utility bill, but...

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Living beyond the reach of a community sewer has the advantage of no monthly bill, but septic system owners are not off the hook. Homeowners who have septic systems, also called onsite treatment systems, should think of themselves as a private water utility company because they are responsible for performing regular maintenance; failing to do so can accelerate system failure, which is an expensive and smelly mess.

A septic system has two basic components, the septic tank and the drainfield (see picture below). After the wastewater leaves the house, the first stop is in the septic tank where



the solids sink to the bottom and the floatables like grease float to the top. The septic tank provides primary treatment and serves to protect the drainfield by removing toilet paper, large solids, foreign objects, and grease

that could otherwise move to the drainfield and cause clogging. The partially clarified wastewater, now called effluent leaves the septic tank and travels to the drainfield where it is spread over a large area below the surface to infiltrate into the ground. For a drainfield to operate properly, the effluent needs to be evenly distributed across the drainfield so that it can be filtered and treated by bacteria in the soil before returning to ground water. If the drainfield is compromised by too many solids, cracked pipes, or excess liquid, it will not filter the wastewater like it is designed to do. A compromised system can contaminate ground water and/or wastewater can back up into the home; sometimes it will rise to the surface and pool, causing health hazards and expensive repairs. Another reason for septic system failure is a system which is too small for the home. If you are planning to add on to your home, contact the county health department about required septic modifications.

There are a number of things septic system owners can do to help their systems function properly and have a long life. These practices start inside the house with consideration of what goes down the drain. A good general rule is that if it didn't come out of you, it shouldn't go down the drain. Obviously toilet paper is an exception and using regular household cleaners is generally okay in moderation. Never put unused prescription or even over-the-counter drugs down the drain. There is evidence that brine backwash from water softeners can increase the rate of drainfield clogging. To minimize these potential effects, make sure the softener is recharging as infrequently as possible and consider plumbing that diverts the discharge to a separate drainfield or infiltration area. You can contact the local health department for additional advice on this issue.

## Tips for inside the house:

- Keep good records of system layout and maintenance; MSU Extension Publications has well and septic folders available which are covered with useful information
- Things to avoid putting down the drain
  - prescription or nonprescription drugs
  - paint
  - grease
  - garbage disposal waste
  - coffee grounds
  - feminine products
  - paper towels
  - excessive household cleaners
  - powdered laundry and dish detergents
- Avoid running excessive amounts of water to the system at the same time; spread laundry out over the week
- Septic system additives are not necessary; your body produces all the additives needed



- Ensure water softeners are set to recharge only as often as needed and consider installing a unit that recharges according to use rather than on a simple timer
- Use septic-friendly toilet paper that will degrade easier, generally the non-quilted and single-ply types

Outside the house, it is important to know where the septic tank and drainfield are located. This way you can avoid driving over them, avoid planting deep-rooted vegetation near them, and avoid irrigating excessively over the drainfield. All of these activities can interfere with effluent effectively infiltrating in the drainfield.

Maintaining the septic tank is critical to protect the drainfield from clogging. The septic tank should be pumped approximately every three to five years, depending on the tank size and the number of people in the house. Newer septic tanks (typically post-2001) are equipped with effluent filters which keep large particles from escaping from the septic tank to the drainfield. The debris should be rinsed off these filters, back into the septic tank each year. Some septic tank pumpers even provide this service in between pump-outs. It will be easier for the septic pumper to locate the lid of the septic tank for service if you have your permit showing the plans for the system (If you don't have a copy of your permit, it should be available from the county health department). After the lid has been located and dug out, it is a good idea to put a riser collar on the tank so that the lid is extended to the surface. On some tanks, an access port is found on each end of the tank and two risers will be needed. In either case, it will not need to be dug out again, making future maintenance or emergency service quick and easy. If you're unsure about how to install a riser, ask your septic tank pumper to install one the next time you have it pumped. They will usually do it for a nominal fee because it will save them time on their next visit.

### Tips for outside the house:

- Determine when your septic tank was last pumped and use the table to schedule the next time the system needs to be pumped.

Table 1. Estimated Septic Tank Pumping Frequencies in Years

Tank Size* (Gals)	Household Size (number of people)									
	1	2	3	4	5	6	7	8	9	10
500	5.8	2.6	1.3	1.0	0.7	0.4	0.3	0.2	0.1	—
750	9.1	4.2	2.6	1.8	1.3	1.0	0.7	0.6	0.4	0.3
900	11.0	5.2	3.3	2.3	1.7	1.3	1.0	0.8	0.7	0.5
1000	12.4	5.9	3.7	2.6	2.0	1.3	1.2	1.0	0.8	0.7
1250	15.6	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
1500	18.9	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
1750	22.1	10.7	6.9	5.0	3.9	3.1	2.6	2.2	1.9	1.6
2000	25.4	12.4	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0
2250	28.6	14.0	9.1	6.7	5.2	4.2	3.5	3.0	2.6	2.3
2500	31.9	15.6	10.2	7.5	5.9	4.8	4.0	4.0	3.0	2.6

\* Your local health department may be able to tell you the size of your tank.

- Determine where your septic tank and drainfield are on the property and note:
  - Deep-rooted vegetation can cause problems with drainfield lines.
  - Irrigation and runoff from roofs should be diverted away from the drainfield so the septic system effluent can infiltrate without competition.
  - Never drive over the drainfield or septic tank. Compaction, increased settling, or cracking of pipes and tanks can compromise the system.
- After locating and digging up the septic tank for maintenance, put a riser or risers on the tank so the lid is at the ground surface and easy to access.

If you'd like more information about the operation of your septic system, contact your county health department or county Extension office. You can also find information online by going to [www.msuextension.org/publications.asp](http://www.msuextension.org/publications.asp) and search using the term "septic". You can access a slide show about Home Septic System Operation & Maintenance using the link at [www.deq.mt.gov/wqinfo/swp/](http://www.deq.mt.gov/wqinfo/swp/). Also, watch for a DVD on the basics of well and septic function and maintenance available from MSU Extension Water Quality in spring 2009. ■

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