PRIVATE SEWAGE SYSTEM INFORMATION

How safe, effective, and economical an onsite sewage system greatly depends on the installation, use and maintenance of the system. Properly used and maintained systems provide years of service. Proper use begins with waste disposal habits. Individuals determine how much, and what enters the system. Many of us were used to "just flushing and it went away", and had never heard of onsite sewage systems until we moved to a rural setting. Coming up with and sticking to proper use and maintenance guidelines will go a long way to maximizing the longevity of an onsite sewage system.

The suggestions outlined below are meant to give some insights into most conventional systems and help with developing proper use and maintenance habits. More sophisticated systems may require additional maintenance. For specific information about a particular system, contact Superior Safety Codes Inc.

Note: All systems should be installed by a qualified and certified Private Sewage Installer.

Tips for Using Your Onsite Sewage System:

- Make efforts to minimize the amount of water that goes into the onsite sewage system; typical water use is about 227 litres (50 gallons) per day for each person. Try not to exceed that amount. Having a water meter installed will help you monitor your water use.

- Systems are designed to handle domestic wastewater. Things that do not break down easily (facial tissue, large amounts of vegetable scrapings, coffee grounds, chemicals, paints, oils, sanitary napkins, applicators, condoms, medicines, pesticides, poisons, strong disinfectants, etc.) can damage and substantially increase need for cleaning the septic tank.

- Restrict the use of in-sink garbage disposals. They add a large amount of organic and inorganic material to your sewage, which may exceed your system's capacity and cause it to fail.

- Do not pour grease or cooking oil down the drain (including toilet). Grease is hard to break down. It will eventually move plug drains and possibly your field.

- Keep your fixtures in good repair. A slow running toilet can add large amounts of water. A running toilet discharging ¼ gallon per minute will result in 360 gallons per day. This is more water than a sewage system for a 3-bedroom home is designed for. To test the toilet, put a few drops of food colouring in the toilet tank. If it shows up in the bowl, it is leaking. It may take as long as an hour for colour to show in the bowl.

Tips for Maintaining Your Onsite Sewage System

- Wastewaters "not included" in the system's design shall not be put into the system. This may include wastewater from:
    - foundation weeping tile drains,
    - a hot tub, spa or hydro massage bath exceeding a 2-person capacity,
    - a swimming pool,
    - an iron filter,
    - water conditioning equipment that generates excessive amounts of wastewater
- Have a diagram showing the location of your septic tank and disposal field.
- If not already in place, install watertight manhole extensions to simplify septic access.
- Make sure the access lids are structurally sound, secure and childproof.
- If access lids are buried, consider raising them above grade to facilitate access.
- Have the septic tank checked annually to determine how often the tank needs to be pumped out. (Typically, tanks are pumped out by a vacuum truck approximately every two years).
- If pumps are used in the system, have any pump screens cleaned (make sure they are re-installed) and have the control operations checked.
- Maintain adequate vegetative cover over the disposal field. Keep the grass trimmed.
- Direct eavestrough down spouts and other surface water flows away from the septic tank and disposal field.
- Systems are installed near the surface – keep automobiles and heavy equipment off of the system. The piping and septic tanks can be damaged by heavy traffic, and traffic will compact the ground reducing its ability to absorb sewage effluent. In winter, traffic (even from snowmobile paths) will drive frost into the system causing it to freeze.
- Do not plant a garden over a septic field.

Commonly asked questions:

1. Will I need to pump the tank?

Yes, every person using the plumbing system contributes solids that will accumulate in the septic tank. These solids (sludge) collect, and are digested very slowly by microorganisms in the anaerobic environment of the septic tank. Solids accumulate over a period of time and reduce the storage capacity of the septic chamber. This reduced storage capacity allows less time for the sewage to be in the tank so solids will not separate from the water as well. Also, there is a quantity of grease, soap curds and other materials that float on the surface of the liquid (scum). Both sludge and scum must be removed from the septic tank periodically and disposed of in a safe manner, usually by hiring a vacuum truck.

If a septic tank is not cleaned soon enough, suspended solids and organic materials will not settle out, and will be discharged into the soil absorption portion of a system. The additional suspended solids and organic material will clog the soil, eventually causing failure of the system. It can be very expensive to fix.

2. How will I know when to have the Septic Tank pumped out?

Tanks should be checked every year in the spring or early summer to determine how much sludge and scum has accumulated. The size of the septic tank and the waste received affects how often it needs to be pumped out. A septic tank with 300 mm of sludge in its first compartment is ready to be pumped out. Pumping a tank more often than is required is much better than leaving it to the last minute. Having the tank pumped out in the spring will allow the biological action to re-establish quicker during the warm summer months. It is not necessary to thoroughly scrub and flush the septic chamber until it is visibly clean. The small amount of sludge that remains on the floor and walls will "re-seed" the septic tank, and contribute to the establishment of its normal operation.

Vacuum trucks are available to pump out septic tanks. They are capable of doing an excellent job without spillage. (You might want to ask your neighbors who they use when they need their tank pumped, or look in the "Yellow Pages" under Septic Tank and Cleaning Systems – Cleaning). The pumper will take the septage to an approved site such as a municipal treatment plant. Inquire about where your pumped sewage will go. For more information, see the Private Sewage Handbook.

3. Are septic tank additives necessary?

No. These products include biologically based materials (bacteria, enzymes, and yeast), inorganic chemicals (acids and bases), or organic chemicals (including solvents). If the additives reduce the need for regular pumping of the septic tank, the question must be asked, "where did the septage go?" If the additive increases the level of biological activity in the tank, the additional digestion of the sludge can increase the amount of gas given off by the microorganisms digesting the solids. The gas bubbles up and can cause the suspended material in the sewage to be buoyed and not settle out in the tank as it should. It is then carried into the final soil port of the system and can plug the soil pores that accept the water. Other chemicals emulsify greases, which will then not float and be trapped as scum in the tank.

They will then flow out to the soil and plug the soil pores. Some of these products may contain chemicals that will damage the effluent absorption portion of the system and will percolate down through the soil to contaminate groundwater and nearby wells. Systems work on natural biological processes similar to composting.

4. Is special care needed for a disposal field?

Yes, there are things you can do to help maintain the disposal field. Disposal fields do not have an unlimited capacity. Limiting water use can help prevent hydraulically overloading a system. Once a disposal field is overloaded with water, the soil becomes saturated. Water moves slower through saturated soil and the oxygen is driven out of the soil. The aerobic soil microorganisms (and larger worms etc.) are driven away, slowing the digestion of the organic particles in the sewage where there is lack of air. Worms and other such insects that keep soil spaces open will also move out. Once saturated, the system will take a long time to recover. A continuously overburdened system will fail and is hard to rejuvenate.

Good water conservation practices and immediately repairing any leaky faucets or toilets can help reduce the amount of wastewater to be treated. Keep grass cut short and direct surface runoff water away from the field area. Do not allow heavy traffic over the disposal field area. Continued traffic, even things like snowmobiles, over disposal field or treatment mound during the winter can cause frost to go deeper into the ground and freeze the system.

5. Is your existing system effectively treating sewage?

Some older systems such as leaching cesspools do not provide adequate treatments. The cesspools were dug deep in the ground, so there is little biological activity and oxygen in the soil to properly treat the effluent. The bottom of the cesspool may also be close to a shallow water table, which would allow untreated sewage into the groundwater. Cesspools often had a large lid at or just below ground, which can create a hazard if the lid is not sound, as someone could fall into them. They were often built out of lumber, which can rot and collapse over time. If you have a cesspool, even if installed when codes allowed their use, you should consider replacing it to enhance the level of treatment you provide for your sewage, in order to prevent groundwater contamination.

Other older systems may not have been designed to treat the increased amount of sewage you now generate in your home. You need to consider the use your family puts on the system. Failures don't always result in effluent coming to the surface. Systems are not intended to simply dispose of sewage ("make it disappear"). Systems must adequately treat wastewater prior to its reintroduction into the environment (the ground water). Have your system evaluated and know what you have.

Private Sewage System Minimum Distances

If there is not a main building between the disposal system and the water course the minimum distance between the effluent disposal component of the private sewage system and the water course is 90 meters.

Septic tanks, sewage holding tanks or sewage effluent tanks shall not be located within:

- 10 meters (33 ft.) from any water source or water well;
- 10 meters (33 ft.) from any water course;
- 1 meter (3.25 ft.) from any property line, and
- 1 meter (3.25 ft.) from any building.

A disposal field, measured from any part of a weeping lateral trench shall not be located within:

- 1.5 meters (5 ft.) from any property line;
- 100 meters (330 ft.) from a municipal licensed water well;
- 10 meters (33 ft.) from any basement or cellar;
- 15 meters (50 ft.) from any water source or water well;
- 15 meters (50 ft.) from any water course, except as provided in Article 2.1.2.4;
- 1 meter (3.25 ft.) from any non-basement building; and
- 5 meters (17 ft.) from a septic tank.

A treatment mound shall not be located within:

- 3 meters from any property line;
- 100 meters (330 ft.) from a municipal licensed water well
- 15 meters from any water source or water well;
- 15 meters from any water course;
- 3 meters from a septic tank;
- 10 meters from any basement or cellar; and
- 10 meters from any (non-basement) building.

An effluent discharge to the ground surface shall not be located within:

- 50 meters (165 ft.) from any water source or water well;
- 100 meters (330 ft.) from a municipal licensed water well;
- 45 meters (150 ft.) from any water course, except as required by article 2.1.2.4;
- 45 meters (150 ft.) from a building; and
- 90 meters (300 ft.) from any boundary property line.

An open discharge system shall not be installed on a property located within a quarter section where **more than 4** parcels, excluding the remnant of the parcel, have been subdivided out of the quarter section.

A lagoon serving a single-family dwelling or duplex shall not be located within:

- 100 meters (330 ft.) from any water source or water well;
- 100 meters (330 ft.) from a municipal licensed water well;
- 90 meters (300 ft.) from any water course;
- 30 meters (100 ft.) from any property line, and
- 45 meters (150 ft.) from a building.

LFH At-grade systems shall not be located within:

- 15 meters (50 ft.) of a water source or water well;
- 100 meters (330 ft.) from a municipal licensed water well;
- 15 meters (50 ft.) of a water course, except as restricted in Article 2.1.2.4;
- 3 meters (10 ft.) of a property line where the ground is level or less than 1% slope;
- 6 meters (20 ft.) of a property line where the slope is 1% or more;
- 3 meters (10 ft.) from any tank installed with this system, and
- 10 meters (33 ft.) of a building.

Definitions:
Water Source – a man-made or natural source of potable water.
Water Course – a river, stream, lake, creek, swamp, marsh or other natural body of water marked by the shore, or a canal, reservoir or other man-made surface feature intended to contain water for a specified use, whether it contains or conveys water continuously or intermittently, but not does not include surface water run-off drainage ditches, such as those found at the side of roads.