



Maintenance and Operation of Sewage Disposal Systems

When are sewage disposal systems used?

Any home or other building that is not connected to a municipal or city sewage system needs a method for getting rid of human waste (feces and urine). All buildings not serviced by a municipal (centralized) treatment plant need to have an onsite sewage disposal system that is properly designed and filed with the local public health authority.

A typical sewage disposal system has 2 basic parts:

- Septic tank – which may also be accompanied by a treatment plant.
- Dispersal area - usually a series of underground pipes or chambers that evenly distribute the partially treated liquid into the ground for final treatment.

How does a septic tank or treatment plant work?

Septic tank

A septic tank is a watertight, underground container used for receiving, treating, and settling human waste. The solids settle to the bottom of the tank and become sludge, while oils and other light material float to the surface, forming a scum layer. Within the tank, anaerobic bacteria, which are bacteria that do not need oxygen, break down the solid waste.

When the septic tank is working properly, these bacteria can reduce the solids by 50 to 60 per cent. The liquid between the sludge on the bottom of the tank and the scum on the top, flows out of the tank into the dispersal area. Further treatment occurs within the soil, prior to entering the ground water table.

The sludge and surface oils remaining in the septic tank need to be pumped out regularly (usually every 2 to 3 years). An authorized person who is a septic system pump-out contractor can do this maintenance.

Treatment Plant

A typical treatment plant uses air to help break down and treat waste. The waste is treated in a septic tank

before flowing into the treatment plant. A treatment plant treats liquid waste to a higher quality, so it is cleaner and safer before it enters the dispersal area than the discharge from a regular septic tank. This creates a smaller area discharge of waste for the homeowner.

How can I install a sewage disposal system?

Every owner who wants to construct a new septic system, or alter or repair an existing one, must do so according to the Public Health Act and the Sewerage System Regulation. For more information, visit the Ministry of Health web page on Sewage Systems at www.health.gov.bc.ca/protect/lup_onsite.html.

An owner must use the services of an authorized person who may be a professional engineer or a registered onsite wastewater practitioner (ROWP). There are 4 categories of ROWPs: planner, installer, maintenance provider, and private inspector. A person may be registered in more than 1 category and provide several services. The authorized person assesses both the owner's needs and the capability of the land for sewage treatment and dispersal. They will then plan or design a septic system that meets those needs. Once the plan is filed with the health authority, an authorized person installs the system according to the plan.

When the installation is complete, the authorized person certifies that the system was installed according to the design. They will also provide a maintenance plan and an 'as-constructed' drawing of the system components to the owner and the health authority.

How is a sewage disposal system maintained and serviced?

Once the septic system is working, it is the homeowner's responsibility to ensure that the maintenance plan is followed. Improper or insufficient (not enough) maintenance may result in system failure, and require costly repairs or replacement of the system.

It is important to have an accurate drawing that shows the location of all parts of the septic system so you and

your maintenance provider can find them. For septic systems constructed under the Sewerage System Regulation, this 'as-constructed' drawing will be provided by the authorized person at the time it is installed.

All septic systems, and especially treatment plants, need ongoing, proper operation and maintenance. An owner of a treatment system should contact a local service agent who is an authorized person and has experience with your specific treatment plant and model, to set up an annual service contract.

Septic tanks should be inspected every year, and they usually need servicing every 2 to 3 years, depending on the number of people using the system and the volume of daily sewage flow.

Here are a few things to keep in mind for servicing a septic tank:

- Use an authorized person for maintenance.
- Remove sludge in the spring rather than in the fall. This prevents leaving undigested solids in the tank during the cold winter months.
- Do not scrub a septic tank clean. A small amount of sludge should be left to renew bacterial activity.

How can I prevent problems with my sewage system?

Sewage disposal systems can be damaged in a number of different ways. Most of these can be prevented by following the advice below:

- If your system was constructed after May 30, 2005, then follow the maintenance plan. Owners of pre-2005 systems should contact an authorized person to develop a maintenance plan.
- In areas where frost penetration is a problem, insulate the main pipe and disposal area with a generous layer of straw during winter months. Insulate the tank and pipe connection from the house as well.
- Use snow fences to promote maximum insulation from snow cover.
- Establish a water conservation strategy for the house.
- If water pools up on a disposal area, seek advice from your environmental health officer and authorized person.
- Do not let any vehicles, including snowmobiles drive or park on any part of the disposal system.

- Do not flush paints, solvents or any kind of toxic chemicals down the toilet.
- Do not plant large trees or shrubs nearby because the roots may affect the disposal field.
- Do not allow roof or perimeter drains, or any surface water, to discharge on or near the sewage disposal system.
- Do not overload the system with too much water. For example, a running toilet or dripping faucet, or by watering on or near the disposal area, or by doing multiple (consecutive) loads of laundry, etc.
- Do not flush cigarette butts, filters, sanitary napkins, newspaper, disposable diapers, condoms, facial tissue (e.g. Kleenex®), paper towels, hair, metal or metal items, coffee grounds, tea leaves, fats or grease. These can all plug a septic tank or a drain field.
- Do not install a garburator without increasing the capacity of the system.
- Do not leave the system not working for long periods during cold winter months.
- Do not allow large livestock to graze on the disposal field.

If you have questions about how sewage systems work, or about local requirements, contact your regional environmental authority at www.health.gov.bc.ca/protect/lup_resources.html.

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