Learn More about Septic System Installation and Maintenance

Whether you're a new rural homeowner, or you've been using a septic system for a while now, take a look at our list of the most common questions about the system installation and maintenance. At Rockyview Aqua Ltd and Cochrane Septic, we know that learning the basics about the septic system on your property can significantly increase its life and efficiency.

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What does my septic system do?

Septic tank:

Your typical two chamber septic tank is the first step in pre-treating household wastewater by separating the solid waste from all the water leaving the home.
The septic tank collects organics and inorganics, some of which sink to the bottom forming a biomass layer while some float to the top creating a scum layer.
The first chamber in the septic tank has a fixed volume. Excess effluent transfers to the second chamber (grey water chamber).
Partially clarified effluent is transferred from the grey water chamber to the septic field by means of either a pump-out or siphon system.

Septic field:

Effluent from the septic tank enters the septic field where it is further treated and filtered before entering the ground water.
As effluent is naturally filtered through the soil, micro-organisms break down harmful bacteria, pathogens, viruses, and use up residual nutrients.
Septic field efficiency and life expectancy are greatly influenced by the homeowner managing the quality of the effluent leaving the septic tank and entering the septic field.

How often do I need to clean my septic tank?

Cleaning schedules can be different between households. Cleaning frequency typically ranges from 6 months to 2 years and is dependent on four major factors:

Septic tank size: 500, 700, 1000 or 2000 gallons.
Family size: including guests, and frequency of entertaining.
Garborator use.
Treated (chlorinated) water supply vs. well water supply.

A septic tank should be cleaned within the first year on a new home to check solids loading conditions and any anomalies that may be under warranty.
A septic tank should be emptied (both the solid side, and the grey water side) when the solids/sludge/scum in the solids chamber displaces about 1/3 to 1/2 of that chambers capacity.
Once your frequency of cleaning has been accurately established by the pumping technician, you should make an effort to stay on schedule to protect your septic field from inadvertent sludge contamination which will irreparably compromise the septic field efficiency and longevity.
An experienced pumping technician will do more than just clean your tank. They should look for indicators of the quality of your septic system installation, such as; code violations, system size, quality components, and septic field condition. The evaluation of the entire system should be considered by the pumping technician when recommending your cleaning frequency.
Procrastination in preventative maintenance is the greatest cause of septic related problems and failures, as discussed at length at conferences for AOWMA (Alberta Onsite Wastewater Management Association).

What time of year is best to have my septic tank cleaned?

Septic tank cleaning can take place at any time during the year, as typically the septic tank is located deep enough where the ground temperatures are fairly consistent year round.
If lawn damage is of concern, consider cleaning your tank when the ground is frozen or when the lawn is very dry, typically in late summer and fall.
A septic tank that is shallow buried (within one foot of the surface) should be cleaned in spring, thus allowing the solids to build up prior to winter. The biodegradation process may produce a warmer tank thereby helping to avoid tank freeze up when the frost starts to travel down.

What other maintenance does my septic tank require?

- The most common maintenance routine will be the scheduled extraction and disposal of sludge/solids that have built up in your tank.
- Further maintenance items may be:
  - Rebuilding the septic tank divider wall which may have corroded, rendering the tank no longer functional.
  - If not originally provided, installing a high septic level alarm to provide early warning of a pump failure and potential sewer back up.
  - If a pump-out system is utilized, raising the pump off the bottom where it could pick up settled solids and send them to the septic field, causing damage.
  - Adding manhole extension rings and new lids to maintain the accessibility and safety of the septic tank.
  - Improvements and repairs to the piping and electrical wiring to reduce risk of failure.
  - Replacement of inappropriate de-watering pumps used instead of a properly applied septic pump which can withstand the corrosive environment.

What maintenance does my septic field require?

A septic field, although requiring very little maintenance, should be located in an area where the wind can get at the surface, aiding in the evaporation of moisture.
The field should not be in a location where rain or snow melt can accumulate resulting in a saturated soil condition, high and dry is best.

Any pronounced dips or settling over the septic field laterals should be filled in with loam to eliminate the collection of water, and encourage water shed in the event of a rapid rain or snow melt.

It is important to keep your septic field area clear of long grass and weeds, as the field works on evaporation as well as percolation into the earth.

Keep the grass on the septic field short, with the thatch removed.

Keep the septic field area free of ground dwelling rodents such as gophers and moles.

The use of any type of sprinkler system over the septic field should be discouraged, as the added water will tax the capacity of the field.

Avoid unnecessary pedestrian and livestock traffic, and no vehicular traffic over the septic field.

What access is needed to my septic system?

Lid accessibility: Septic tank lids range from about 100 to 350 pounds, and can be very difficult to move. Planting excess bushes, building structures which recess the lids, or putting heavy objects which one person cannot reasonably move, are of course discouraged. Septic tank lids must be at ground level to facilitate access for regular maintenance or if a problem should occur.

Tank accessibility: As a septic haulers truck is limited to its ability to draw a vacuum proportional to our elevation above sea level, physical laws limit the trucks capacity to draw fluids. At our elevation, this vertical limit is about 27 vertical feet. As well as vertical restrictions, adding lengths of hose also reduces our vacuums ability through frictional pressure losses. Typically about 100' of hose and the truck being parked one story above the top of the tank is the nearing an impossible lift.

What should, and should not be put into my septic system/tank?

The septic tank is intended to receive all fecal matter, toilet paper, and any organic matter disposed into the sanitary system through normal operation of the household.

All discharge of laundering, dishwashing and personal hygiene soaps are intended to be received and separated within the septic tank.

The discharge from a water softener is a permitted use when on a septic system, with 'potassium chloride' being the preferred regenerant.

Minor Amounts of cooking grease and oils, and cleaning products will be separated within the septic tank as wastewater passes onto the septic field.

Excess Grease and Cooking Oils will accumulate in the homes sanitary piping system and eventually block them off completely. Grease and oils will carry over with the effluent leaving the septic tank and cause irreparable damage to the septic field by rapidly reducing the porosity and permeability of the soil surrounding the septic field laterals. Collect grease and oils and dispose of them with the trash.

Non-Biodegradable Products such as feminine hygiene products, condoms, wet strength towels, baby wipes, hair, plastic etc. should be put in the trash, and not in the septic system. These types of items can cause pump failure as well as plug siphon systems and septic field laterals resulting in a sewer back up into your home. Your septic system is not a garbage can for the disposal of non-biodegradables. Be environmentally friendly.

Excess Bleach (Chlorine) and Harsh Chemicals will increase the septic tanks toxicity which kills the bacteria necessary for the septic tank/system to function. Micro-biocides (chlorine) and harsh chemicals will result in increased septic tank odor and rapid accumulation of sludge, as the natural biodegradation will have been defeated.

Septic Tank Additives are not necessary in a septic tank which receives untreated well water, as bacteria will thrive and multiply resulting in a natural septic tank environment favorable to biodegradation. Septic tank additives are ineffective in a septic system, receiving treated (chlorinated) water as the residual chlorine will continually suppress bacterial conditions in the septic tank.

Garborators if used liberally will add to the rapid accumulation of sludge/solids in the septic tank, and increase the frequency of which they need to be removed through a cleaning. The accumulation of solids in the tank from the garborator is further increased if the home is on a treated water supply and there is no bio-degradation in the tank.

Why do I have septic odours in my home or around the tank?

Alberta plumbing code calls for all plumbing fixtures (sinks, showers, tubs, toilets, etc.) to have a liquid seal or 'trap' to prevent sewer gasses from entering the dwelling.

On a properly installed and functioning septic system, sewer gasses that are normally present cannot enter the dwelling unless a liquid seal or 'trap' has dried out, leaving an open path for sewer gasses to enter the home.

The floor drain for example, in the mechanical room which has not been receiving water could have dried out and simply needs some fresh water to be poured into it to re-establish the liquid seal.

By virtue of its function, it is not uncommon to have an odour around the septic tank lid, particularly if the lid and manhole extension rings are corroded or not fitting properly.

A foul odor off the septic tank may be an indicator that the tank isn't working properly either by lack of bacterial action, being overdue for a cleaning or being in a flooded condition.

What longevity can I expect from my septic system?

It is not uncommon to have a quality system last 30 or more years.

By managing your water consumption and the quality of the wastewater entering your septic system, you can maximize your systems potential.

The long term effects of indiscriminate discharge of grease, cooking oils, non-biodegradables, harsh chemicals, paints, and cleaning products will result in the premature failure of your septic system. Although we live in busy and modern homes resulting in a proportionate discharge in wastewater, the simple fact is that a septic system based on its principles of operation cannot handle these contaminates.

Consider that the effect of not doing the preventative maintenance required could result in your system failing within a few years. The cost and inconvenience of retrofitting or replacing your septic system is significant, and is also conditional that you have the area necessary to install a new septic field.

The scale of economics is greatly in favor of preventative maintenance of your septic system. Your septic system is a dynamic utility to your home that requires you to be proactive, and not reactive.

What should I know about septic disposal?

The first and preferred option by Alberta Environment for septic disposal is for your hauler to dispose of you septage at an approved wastewater receiving facility

As many municipalities are challenged by not having or providing adequate wastewater receiving facilities, the second option is land spreading.

For land application of septage, the hauler must obtain a 'Letter of Authority' from Alberta Environment outlining specific criteria that must be followed.

Land application of septage must be done properly by the hauler to ensure that there are no adverse environmental impacts such as; odors problems, potential runoff, bacteria or pathogen issues, etc. We all have a responsibility to protect our environment, our lakes and streams, and of course public health.

The cheapest hauler may not be your best choice as there are various fixed costs associated with the proper and legal disposal of septage which are reflected in

the cost of service.

Take the time to ask your hauler his business practices on disposal. By asking questions, you are assessing their knowledge and commitment to do the environmentally right thing.

It is in your best interest to procure a professional and reputable hauler/contractor when maintaining your septic system.

What troubleshooting can I do if I have a septic problem?

If you have a pump out system and a high septic level alarm, an alarm indicates that the pump is unable to discharge water to the septic field. There are several things you can check as a homeowner:

Check the pump breaker in the electrical panel.

Is the septic pump plugged in at the receptacle by the tank lid (if provided)?

Is there power at the receptacle? Check with an electrical meter or any plug in appliance such as a hair dryer.

If you have power and the pump is plugged in, it is likely that the pump has failed, and you may need a replacement.

If you have a pump out system, and the floor drain has backed up:

Do the same procedure as above.

Call your septic hauler and describe the situation. They may ask if you are able to remove the septic tank lid and describe what you see. For example, you may see a divider wall in the middle of the tank with the solids side level being below the top of the divider wall and the grey water side level being even lower. You would likely have a normal tank, and the line from your home to your tank is obstructed and may need an auguring or another remedy.

If you have a siphon system in your septic tank, you likely will not have a high septic level alarm and your first indication of a problem will be your floor drain backing up, or perhaps your basement toilets flushing slowly:

There are no electrical items to check.

Phone your septic hauler and describe the situation. They may ask you to remove the septic tank lid if you feel you can. If the tank is flooded, the divider wall will not be visible, and the effluent is not leaving the septic tank through the siphon system for some reason.

If the divider wall is visible with the solids chamber being about 6 inches below it, and the level of the grey water chamber is even lower, than it is likely that the line from the home to the tank is obstructed, and needs to be augured.

Never attempt to enter a septic tank, as the gasses in the tank are dangerous. Check only what you are comfortable with checking, and source the assistance of a professional as soon as possible in order to limit risk and potential damage to your home.

Who do I call to have a septic system installed or modified?

• Your first and best choice for septic work is a contractor who does this line of work for a living. This contractor will be a Certified Septic Installer and have a certification number. It is also desirable that your contractor be a current member of AOWMA (Alberta Onsite Wastewater Management Association).

• Resist using a contractor for reasons that they have a backhoe and claim to have done many systems, particularly if they are not certified and ask you to take out a Homeowner's Permit, and they will install the system while you are taking ultimate responsibility for its design, installation and warranty.

· Designing and installing a septic system requires a level of expertise and attention to detail derived from training and certification, the Alberta legislated Standards of Practice (a septic design and installation code book), as well as significant accredited installations.

· Existing septic systems that have failed or are malfunctioning often can be modified or retrofitted by a diligent septic contractor. For example:

1. A septic field that cannot handle the volume of influent and has erupted (septic on surface), can often be expanded to utilize the existing fields capacity plus an added on portion to meet the homeowners wastewater needs.
2. You may have a fully functional septic field for your wastewater needs, however you septic tank is badly corroded and only it needs to be replaced.

If you are looking to procure a septic installation contractor, take the time to phone a couple of septic haulers in your area. The haulers will know who is good and who is not by the quality of installations they see on a daily basis. Professional quality septic contractors often do cost more, but you will get a quality system that should last 30 years or more with proper maintenance.