

Care of Your Ecomax Waste Water Treatment System and Your Treatment Tank

For the Residential,
Commercial, Municipal,
Utility and Industrial
Markets



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Your Wastewater Treatment System

Is your responsibility!

Did you know that as a homeowner you're responsible for maintaining your effluent wastewater treatment system? Did you know that maintaining your septic system protects your investment in your home? Did you know that you should periodically inspect your system and pump out your treatment tank?

If properly maintained, your wastewater treatment system can provide long-term, effective treatment of wastewater. If your wastewater treatment system isn't maintained, you might need to replace it, costing you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. And if you sell your home, your treatment system must be in good working order.

This guide will help you care for your treatment system. It will help you understand how your system works and what steps you can take as a home owner to ensure your system will work properly.

As a septic system owner, you are responsible for:-

- Ensuring the house drains and tank don't leak
- Getting things fixed if they are not working properly
- Keeping the system well maintained
- Ensuring the system is checked regularly
- Getting the tank pumped (de-sludged) when it becomes too full to process the flow going into it, (refer septic tank guide section)
- Maintaining and protecting the drainage field

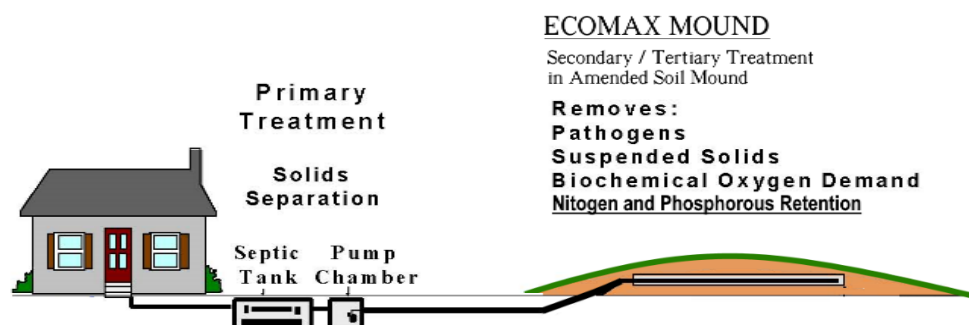
How does it work?

Components

Atypical treatment system has four main components: a sewer pipe from the dwelling or facility, a treatment tank, a drain field/ disposal field and the soil. Microbes in the soil digest or remove most contaminants from the wastewater before it eventually reaches any ground water.

Top Four Things you Can Do to protect your Treatment System

1. Regularly inspect your system and pump your treatment tank as necessary.
2. Use water efficiently.
3. Don't dispose of household hazardous waste in sinks, laundry and toilets.
4. Care for your disposal field.



WHAT IS WASTEWATER?

Wastewater, or sewage, is generated through the use of toilets, bathroom sinks, showers and bathtubs, kitchen sinks, garbage disposals, dishwashers and washing machines. The average person produces between 115 litres and 150 litres per day of wastewater. The wastewater contains dissolved organic and inorganic materials, suspended and settleable solids, and microorganisms, including bacteria and viruses. Direct discharge of wastewater to surface waters, groundwater, or ground surfaces will result in public health hazards.

To protect the environment, the majority of unsewered homes utilize septic tanks to remove solids and greases, and leach fields, or other types of soil absorption systems, for wastewater disposal.

Septic system aliases:

- On-Lot System
- Onsite system
- Individual Sewage disposal system
- Onsite sewage disposal system
- Onsite wastewater treatment system

Pipe from the home or facility

All of your household wastewater exits your home through a pipe to the septic /treatment tank.

Why should I maintain my Septic System?

When septic systems are properly and correctly maintained they effectively reduce or eliminate most human health or environmental threats posed by pollutants in household wastewater. However, they require regular general maintenance or they can fail. Septic systems need to be monitored to ensure they work properly throughout their service lives.

Saving You Money

A key reason to maintain your septic system is to save you money! Failing septic systems are expensive to repair or replace, and poor maintenance or operating practices is often the culprit. General maintenance and common sense is a bargain when you consider the cost of replacing the entire system.

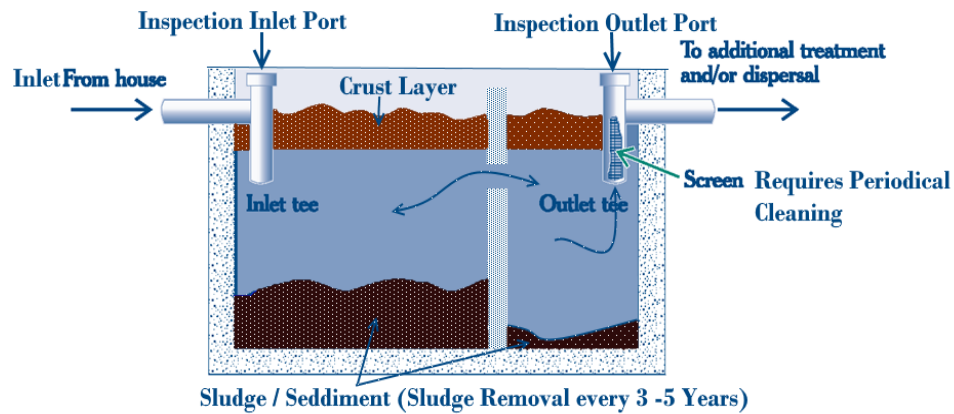


Your Septic Tank

The septic /treatment tank is buried, water tight container typically made of concrete, fibreglass or polyethylene. It holds the wastewater long enough to allow solids to settle out (forming sludge) and oil and grease to float to the surface (as scum). It also allows partial decomposition of the solid materials. Compartments and a T-shaped outlet in the treatment tank prevent sludge and scum from leaving the tank and traveling into the drainfield.

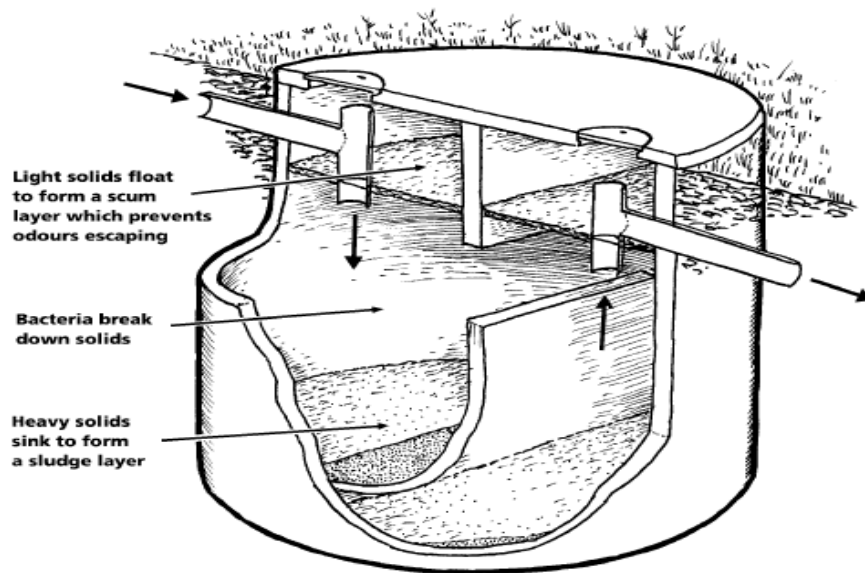
Your septic/treatment tank may have risers installed if the sewer line depth was deeper than the inlet on the tank. Regulations require all treatment tank lids to be finished at ground level so as to allow for ease of inspection and pumping out the tank. Septic tank lids must not be covered and must be accessible at all times.

Typical Baffled 2 Compartment Septic Tank



HOW A SEPTIC TANK WORKS

A healthy septic tank is a living ecosystem where the right bugs (bacteria) thrive in the right proportions to digest waste and treat the water (effluent).



The contents of a healthy septic tank should form 3 layers –

- A layer of fats (called scum) which floats to the surface.
- A clear layer (called effluent).
- A layer of solids (called sludge or bio-solids) which sinks to the bottom.

The scum helps prevent odours escaping and stops air entering. The treated effluent flows out of the tank through an outlet pipe as new wastewater enters. In most septic systems, the effluent is discharged from the septic tank directly into the Ecomax. In areas where soil is shallow or unsuitable, special Amended Soil Mounds are constructed (e.g. Ecomax Mounds)

At this stage the effluent still contains large amounts of dissolved pollutants such as salts and nutrients (e.g. compounds of nitrogen and phosphorus). It also contains disease causing pathogens (eg. viruses, bacteria and worms). In the Ecomax Mound the natural soil processes kill off more pathogens and break down the nutrients that cause pollution. This is a slow process, and soil bacteria need oxygen to work, so it is important not to overwhelm the soil with too much effluent. In time the effluent evaporates, is taken up by plants nearby or leaches into the groundwater zone. A hazard is created when effluent flows along surface or subsoil pathways into drainage channels, creeks or rivers.

Tip to prevent build-up, sludge and floating scum needs to be removed through periodic pumping of the septic tank. Regular inspections and pumping are best and cheapest way to keep your septic system in good working order.

Checking YOUR SEPTIC SYSTEM

Your septic tank is a living ecosystem where bacteria digest waste.

Like any living system, it can become sick if flooded, poisoned with chemicals, or not looked after.

CHECKLIST: IS YOUR SEPTIC TANK HEALTHY?

Your septic tank may need attention if any of these conditions occur-

- The air around it smells-usually like rotten eggs gas.
- The ground is damp or soggy, or pools from downhill.
- The toilets or drains are slow to clear, or keep backing up
- The septic tank has not been pumped out (de-sludged) in the past 3-5years (this is the most common cause of problems – get it pumped)

If any of these factors apply, you should act quickly so that the damage, and the cost of repair, does not get any worse.

To catch septic problems before they get out of hand, do this simple septic safe check-up at least once a year.

The DO-IT-YOURSELF ONCE-A-YEAR 20-minute SEPTIC CHECK-UP

DON'T FORGET YOUR SAFETY:

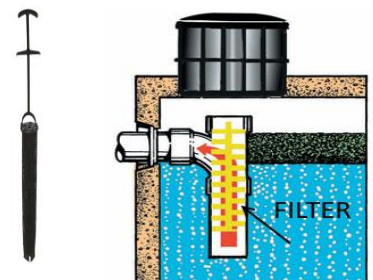
- *septic tanks are hazardous, plan carefully and don't forget your safety;*
- *beware of flammable and toxic gases and ensure the site is well ventilated;*
- *approach the opening only after the lid is left open for a little while;*
- *never smoke or use a naked flame near an open septic tank;*
- *ask a second person to watch you and to call for assistance if necessary;*
- *wear gloves and remember to wash hands immediately after checking;*
- *let your doctor know if you suffer any injuries during checking.*

1. Carefully open the inspection cover - you may need a heavy screwdriver - and then stand clear for a while. Keep naked flames well away. Check the fluid level near the outlet. Use a torch if necessary. Fluid should be no higher than the outlet pipe at the wall of the tank (there should only be floating 'scum' above this level - see the septic tank diagram above). Warning – Wear protective gloves and wash hands.

2. You have an effluent filter installed in your outlet pipe within your treatment tank (Septic tanks only), check it is working and not blocked or clogged.

Action: If it's clogged – rinse clean with a hose so the drainage goes back into the septic tank. If it doesn't clean up, replace the filter cartridge.

Warning – Wear protective gloves and wash hands.



3. Check all drains and toilets in the house are working properly.

Action: If drains and toilets are slow to empty, the pipes may be blocked or the septic system may be full or the trenches may be clogged or exhausted. You should call a plumber or septic system specialist.

COMMON CAUSES OF SEPTIC SYSTEM PROBLEMS

• Tank too full

The level in the septic tank should not be higher than the outlet (pipe inside septic tank facing the disposal area).

Solution: if the water level is higher than the outlet pipe in the tank, contact a septic tank pump out company from the Yellow Pages to pump out the tank



• Too much sludge and scum in the tank

Septic tanks work by retaining solid scum and sludge and just letting liquid effluent flow out to the disposal field via the outlet through the outlet filter. The solids don't move out of the tank and must not get into your disposal field.

They just stay behind and build up. If you don't have the tank pumped out (de-sludged) regularly, it will eventually fail and untreated wastewater with heavy solids contamination will flow out of the tank, clogging pipes and the drain field. You should have your tank pumped every 3 to 5 years.

Solution: De-sludging clean out your septic tank. Contact a septic tank pump out company from the Yellow Pages to pump out the tank



• Too much water going into the system

This causes the effluent to flow too quickly through the tank before the bacteria have a chance to work. As a result, solids can be pushed through the system, polluting and clogging the Ecomax Mound.

Solution: Use less water- spread water loads evenly out each day rather than high loading all on one day, refer water efficiency recommendations –

Predominantly homes on tank water already water wise and used to conserving water this doesn't mean you become complacent, be mindful of how much water you are using and expecting your Ecomax to get rid of each day, but in homes connected to reticulated water, there is much more temptation to overuse water. See How to maintain a healthy system for tips on reducing water use.



BACKGROUND INFORMATION

(1) How to check the sludge and scum depth of your tank

1) Take a metal or plastic stick (eg. electrical conduit) about 4m long. Wrap it tightly from end to end with towelling or cloth.



2) Wearing rubber gloves, remove the inspection cover (inlet end) and insert dip stick all the way to the bottom of the tank.



Health & Fire Hazard
Always wear gloves,
don't smoke and keep
naked flames away.

3) Withdraw it completely, observe the size and position of the scum mark (bottom) and the sludge mark (top).

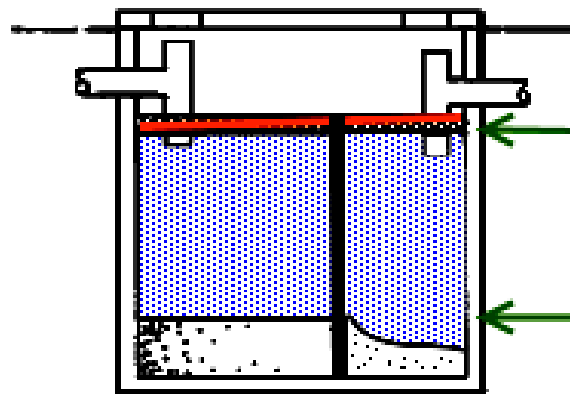


4) Compare the marks on the dip stick with the diagnostic illustrations on the next page.

Health caution: Put the cloth strip in a waste bag and burn or place in the garbage. Wash down the stick and place in sunlight out of reach for a few days. Dispose of the gloves (or soak them in a mild bleach solution) and wash your hands and arms thoroughly.

Your Quick Self Check on the Health of Your Septic Tank

HEALTHY SEPTIC TANK



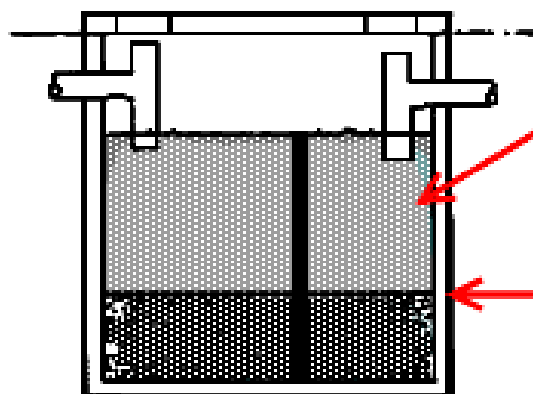
Scum mark

Sludge mark



SICK SEPTIC TANK

BACTERIA HAVE DIED
NEEDS PUMPING OUT, FILLING WITH
FRESH WATER AND ADDITION OF LIME



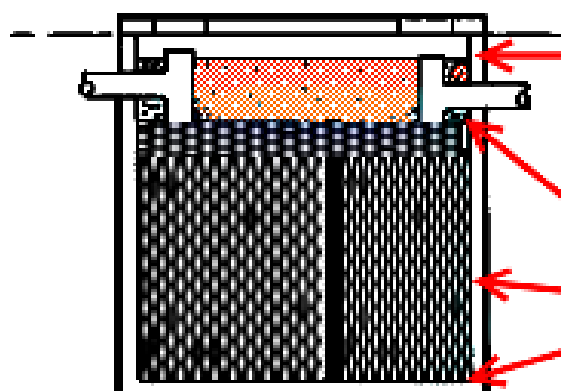
NO SCUM OR CRUST,
RAW SEWAGE FLOATING ON
TOP OF WATER

Sludge mark



VERY SICK SEPTIC TANK

NEEDS PUMPING OUT FILLING WITH FRESH
WATER AND LIME - WILL CAUSE CLOGGING
OF ECOMAX MOUND AND FAILURE



Scum mark

Sludge mark



The dead possum myth

In the old days when a new septic system was started up on a farm, a dead possum or sheep was sometimes thrown in to the septic tank. Septic folklore had it that the carcass would 'kick-start' the system. In fact the sewage which starts flowing into the tank as soon as it is connected to the house provides plenty of nutrients for the bacteria to begin doing their job. To start up a new or pumped out system, fill the tank with clean water and add a cupful of lime down the toilet every day for 7 days.

The lime helps prevent odours and increases the pH (alkalinity) which encourages bacterial growth.

This treatment can also be used if the septic tank becomes smelly.



Ecomax Disposal Mound

If you have a healthy treatment tank you will have a healthy Ecomax Mound

What does the Ecomax Mound do...?

It provides the final advanced treatment to the effluent wastewater after the treatment tank and cleans up the wastewater so that it can safely discharge back into our environment without causing any health or environmental risks.

It's a critical part of your on-site wastewater treatment and as such, it's important to look after your Ecomax Mound carefully – in saying this it's just common sense. If you follow the instruction within this guide, you will have a trouble free wastewater system.

The treated wastewater exits the septic / treatment tank and is discharged into the Ecomax Mound via gravity or pump (depending on your individual requirements) where additional treatment occurs within the mound. The treated wastewater is pushed along into the mound for further treatment every time new wastewater enters the tank – the equivalent volume of pre-treated wastewater passes to the Ecomax Mound for treatment and disposal.

The Ecomax System Operates as follows:

- Drainage from the house or facility to the septic / treatment tank for pre-treatment;
- Gravity flow or pump fed to the Ecomax Cell – storage in drain field
- effluent treatment occurs here;
- Discharge over perimeter bund and loss by evapotranspiration- ZERO discharge in hot or warm weather;
- Infiltration in periphery of system or for impervious sites through extended subsurface dispersal.

Effluent treatment occurs during its flow through and discharge from the Ecomax Cell in contact with the amended soil.

Treatment processes applied to effluent during flow through cell include:

- | | |
|--------------------------------------|---------------------------------|
| Filtration | • oxidation and reduction |
| pH adjustment | • nitrification/denitrification |
| ion exchange | • volatilisation |
| biological water and nutrient uptake | • detention (20days) |
| specific absorption | • evaporation or dilution |
| precipitation | |

Phosphorus is both sorbed by the amended soil and precipitated as a calcium phosphate compound possibly octocalcium phosphate.

Nitrogen is volatilised, nitrified and de-nitrified.

Microorganisms are killed off by filtration, detention, natural die-off under inhospitable cell conditions (slightly alkaline, cold) and possibly predation by soil microfauna.

Hydraulic handling capacity of a given cell is determined by the quantity of effluent been treated, as such using more water than what the system was designed for will cause problems by overloading and possibly leaking.

If the Ecomax Mound is overloaded with too much liquid from either one all of the below, it will flood, causing leakage to flow to the ground surface, toe seepage and even create backups in the plumbing fixtures and prevent treatment of all wastewater.

Your Ecomax will be installed with either a standard septic tank and two Ecomax Cells (mounds) or an aerobic treatment system and one cell, no matter what system you have installed it's important that the guide in this booklet is followed.

For a two cell (2 mound Ecomax)

If your system installed, is a two mound Ecomax, the hydraulic design of each mound will be equivalent to the daily loading specified by your waste management report and as approved by council. Your engineer would have calculated the expected wastewater loading generated based on the Australian Standards and or to your Local and State Governing Authorities. It's critical that you know how much wastewater treatment and disposal your Ecomax is designed for, putting more water into the Ecomax than what it is designed for will ultimately cause overloading- (water pooling on surface or water leaching out of mound).

The Ecomax twin cell system provides a benefit of utilizing one cell for a period of six months and then diverting to the resting cell for the next six months. The purpose for the diversion is to allow one cell to dry out, and any biofilm build-up that maybe on the inside of the internal drains to dry, crust and fall to the bottom of the cell allowing free and open drainage when the next diversion occurs. (Failure to divert or irregular diversion will cause the biofilm to build-up to a point that the new effluent entering cannot pass freely through the filter media and reduce the performance and capacity of your Ecomax.

General Causes of Overloading

1. Higher water usage within the home / facility than what the system is designed for
2. Failure to divert Ecomax Cells or irregular diversion
3. Entry of storm water via surface or subsurface or both
4. Non-septic tank friendly chemicals used and disposed of into the septic system
5. Not mowing or leaving mowed lawn cuttings on the mound to build up
6. Irregular higher than normal rain conditions
7. Any changes to the design or approved plan, with landscaping, soil dressing, buildings etc.

Easy Preventable actions to avoid Overloading

1. Make sure you are using no more water than what the system is designed for, ensure you do not have any dripping taps, faulty running toilets and all appliances are water saving and water efficient.
2. Ecomax Cells- if you have 2 identical cells, the must be diverted strictly every 6 months by turning the diverter.
3. Inspect your Ecomax when it's raining, if there is stormwater runoff into or around the Ecomax ensure you divert any water away from the area, if there is no surface runoff then entry of subsoil water could be entering the Ecomax – if any of these are present then immediate stormwater management practices need to be implemented by you the home owner to direct runoff away from the Ecomax – it's critical NO stormwater enters the Ecomax Mound and it's your responsibility to manage stormwater on your property.
4. Only use septic tank friendly cleaning products, NO chemicals that claim to kill bacteria are to be disposed of down the drains, i.e. bleach, napisan, Toilet blue ducks, paint, oils or grease etc.
5. Keep the mound mowed, keep the turf cut as low as possible and remove all turf cuttings off the mound.
6. If you choose to landscape or build ask yourself what will the impact be to the Ecomax – any changes to the surrounding area can impact on the performance of the Ecomax.

So you have a leaking Ecomax Mound “Don't Panic”

Now you have identified wastewater is seeping from the surface of your Ecomax Mound or is it leaking from the side on the ground level or the diverter has stationary wastewater up the pipe, it is now overloaded. To quickly correct operating water levels as per manufactures specifications, arrange a septic pump out truck to attend your site and suck out the wastewater from both the inspection ports(100mm PVC Capped Pipe) directly above each your mounds so that both drains are empty. You may need to follow this process a couple of times if the drains refill within a day or so-. One mistake people make is they pump out their septic tanks- this will not correct any overloading in the Ecomax Mounds and is just a waste of money! Overloading in the Ecomax and if not corrected will cause the Ecomax to continue to leak water out, you need to ensure one drain (the dormant drain) remains empty and the operational drain never has more than 250mm of water – if inspection of the drains shows the dormant drain (non-operation drain) filling up with water then clearly you have an entry of stormwater into the Ecomax. If you do not control the entry of stormwater into the Ecomax, your Ecomax will continue to overload as you are now expecting the Ecomax to act as a effluent and stormwater disposal system – not what it is designed for! **The Ecomax is not a stormwater soak well!**



Once you have pumped out your Ecomax Mounds, now you must give the mounds time to dry out, restrict the amount of water usage within the home, spread your washing machine usage across the week and not all on one day, check the stormwater subsoil and surface runoff and install suitable drainage diversion. It's simple, if both your drains are overloaded and understanding one drain is turned off for six months and yet is full then clearly there is entry of water getting into your Ecomax.

Your treatment tank will need pumping every 3-5 years and it's a condition of your State Health Department that this is done.

Protecting Health and the Environment

Other good reasons for safe treatment of sewage includes preventing the spread of infection and disease and protecting water resources. Typical pollutants in household wastewater are nitrogen, phosphorus and disease causing bacteria and viruses. If a septic system is working correctly, it will effectively remove most of these pollutants.



Use water efficiently?

Average indoor water use in the typical single family home is almost 150 litres per person per day. Leaky toilets can waste as much as 757 litres additional per each day. The more water a household conserves, the less water enters the septic system. Efficient water use can improve the operation of the septic system and reduce the risk of failure.

High-efficiency toilets

Toilet use accounts for 25-30 percent of household water use. Do you know how many litres of water your toilet uses to empty the bowl? Some homes have toilets with 13-18 litre reservoirs, while newer high efficiency toilets use 6 litres of water or less per flush. If you have problems with your septic system being flooded with household water, consider reducing the volume of water in the toilet tank if you don't have a high-efficiency model or replacing your existing toilets with high efficiency models.

Faucet aerators and high-efficiency showerheads

Faucet aerators help reduce water use and the volume of water entering your septic system. High-efficiency showerheads or shower flow restrictors also reduce water use.

Water Fixtures

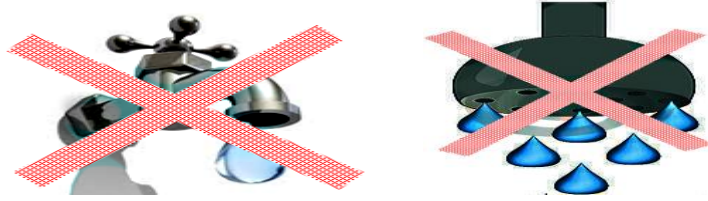
Check to make sure your toilet's reservoir isn't leaking into the bowl. Add five drops of liquid food colouring into the reservoir before bed. If the dye is in the bowl the next morning, the reservoir is leaking and repairs are needed.

Use Water Efficiently!

- Install high-efficiency showerheads
 - Fill the bathtub with only as much water as you need
 - Turn off faucets while shaving or brushing your teeth
 - Run the dishwasher and clothes washer only when they're full
 - Use toilets to flush sanitary waste only (not kitty litter, diapers, or other trash that is not biodegradable)
 - Make sure all faucets are completely turned off when not in use
 - Maintain your plumbing to eliminate leaks
 - Install aerators in the faucets in your kitchen and bathroom
- Replace old dishwashers and appliances, toilets and clothes washers with new, high-efficiency models.



A small drip from the faucet adds many litres of unnecessary water to your system every day. To see how much a leak adds to your water usage, place a cup under the drip for 10 minutes. Multiply the amount of water in the cup by 144 (the number of minutes in 24 hours, divided by 10). This is the total amount of clean water traveling to your septic system each day from that little leak.



Watch your drains

What goes down the drains can have a major impact on how well your septic system works—so putting it simply the septic system is only as good as the waste you are flushing down the drains.

Waste disposal

What shouldn't you flush down your toilet? Dental floss, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, and other kitchen and bathroom items that can clog and potentially damage the septic system components.



Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can stress or destroy the biological treatment taking place in the treatment tank and will cause your Ecomax leach field to block or clog.

Washing machines

By selecting the proper load size, you'll reduce water waste. Washing small loads of laundry on the large load cycle wastes precious water and energy. If you can't select a load size, run only full loads of laundry.

Spread your washing load over the week, not all in one day – do you know how much laundry water is being dumped into your septic system all on one day?

Doing all the household laundry in one day might seem like a time-saver, but it will be harmful to your septic system. Doing load after load does not allow your septic tank time to adequately treat the waste. You could be flooding your Ecomax without allowing sufficient recovery time. Try to spread water usage throughout the week. A new Energy Star clothes washer uses 35 percent less energy and 50 percent less water than a standard model.

Care for your Ecomax

Your Ecomax Mound is an important part of your septic system. Here are a few things you should do to maintain it.

Plant only grass over and near your Ecomax Mound. Roots from nearby trees or

- shrubs might clog and damage the Ecomax internal drains and cause failure.
- Don't drive or park vehicles on any part of your septic system. Doing so can compact the soil in your mound and cause damage to the underlying structure, pipes and components.

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- Keep roof gutters and downpipe, rainwater and stormwater overflow and any other water that can enter into the Ecomax mound away. Flooding the Ecomax Mound with water will cause overloading and a failed system.
- Keep livestock off the Ecomax Mound.
- Do not reticulate over or around the Ecomax Mound.
- Keep all stormwater out of the Ecomax Mound!

DO...



- Inspect and, if necessary, pump septic tank every three years.
- Reduce the amount of water used during winter and spring when rainfall levels are high.

DO NOT...



- Flush semi or non-biodegradable items into septic tank, including paper towels, newspapers, writing paper, rags, disposable diapers, or cat litter.
- Wash down sides of septic tank when it is pumped. The remaining slime contains bacteria which will be needed to digest the wastewater.
- Flush large amounts of chlorine bleach or lye products into the septic tank. However, normal household use will not harm the bacteria.
- Pour used motor oil into the septic tank.
- Discharge brine (salt water) waste from self-regenerating water softeners to the septic tank. The high salt concentrations will clog the soil pores.
- Connect roof drains and yard drains to septic tanks. Extra water will flood the tank and the leach field.
- Add sodium hydroxide or potassium hydroxide to the septic tank. These chemicals will affect solids settling and cause the sludge to flow into the leach field.
- Construct leach field in close proximity to another leach field. The soil will become saturated and both systems will fail.
- Construct leach fields in impervious soils, near fractured bedrock, on steep slopes, or on flood plains.
- Plant small or medium-sized trees within ten feet of leach fields or large—sized trees within 20 feet of leach fields. Roots will clog the pipelines.
- Plant vegetation which requires excessive amounts of water on top of the leach field.
- Drive vehicles or place heavy objects, such as portable swimming pools, over septic tanks and leach fields. In addition, - stakes-for-plants and supports for children's swings should not be placed over septic tanks and leach fields.
- Do not use products that are highly corrosive.
Products such as caustic soda should not be used to clean drains connected to septic tanks.
If you need a powerful cleaner that is safe for use in a septic system, use a disinfectant like DOMESTOS.
- Do not ignore your septic system.
Good maintenance should ensure your system functions as it should. This includes activities such as: getting the sludge pumped out of your tank routinely, (approximately every three years) and repairing leaky fittings in the home, (to avoid overloading your tank). Avoid planting trees or other plants where they could grow over pipes which lead away from the septic outlet.
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- Do not overload the system.
Each septic tank has a maximum daily capacity. Exceeding this can result in back-ups and surfacing of the contents.
- Do not use garbage disposals
Garbage disposals increase the loading of solids and can mean your system needs to be pumped more frequently.
- Take care with what goes into the system.
Never let items such as plastic film, tampons, etc. be flushed down the toilet. They can cause serious blockage problems in a septic tank.
- Don't allow surface water to flood the tank system or wastewater disposal area.
- Don't use bleaches or strong disinfectants, or large amounts of natural antibacterials such as eucalyptus oil. Your treatment system relies on beneficial bacteria to treat the waste water. Bleaches and other strong disinfectants can kill off these helpful bacteria, seriously reducing the system's effectiveness.
- Don't put cooking fat or oils down the sink.
- Don't wash paint brushes or pour other chemicals in the sink.
- Don't pour Napisan or other soakers down the drain, soak clothes in a bucket and empty the bucket out on the grass instead.
- After mopping the floor, don't pour the bucket of water (with Pine O Clean or other disinfectant/cleaner), down the drain. Empty the bucket out on the grass instead.
- Don't use 'Toilet Blue' or toilet deodorisers that hang in the bowl. These add a continual low dose of disinfectant to the system.

How to Choose a Washing Machine?



- 1 Select a washing machine of suitable capacity that meets your household needs.
- 2 Choose a model with more ticks.
- 3 Look for a model with the lowest water consumption per wash.

Tips for You to Re-use Water

- 1 Wash on full load.
- 2 Choose the correct wash cycle to avoid water wastage.
- 3 Collect rinse water from the last cycle of your wash in the washing machine for flushing toilet or mopping the floor.

Conserve Water

SAVE MORE

with Water Efficient Washing Machines



What can make my system fail?

If the amount of wastewater entering the Ecomax is more than the system can handle, the wastewater backs up into the house and leaks.

You can suspect a system failure not only when a foul odour is emitted but also when partially treated wastewater flows up to the ground surface or leaks out on the ground. By the time you can smell or see a problem, however, the damage might already be done.

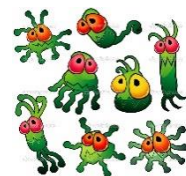
By following the DO's and DO NOT "above and limiting your water use, controlling stormwater, you can reduce the risk of overloading your Ecomax.

Your septic tank tells us how well you are looking after it, we are told "we don't use any of these products" yet the septic tank tells us a completely different story.

Failure causes

Household toxics and cleaners

Does someone in your home use the utility sink to clean out paint brushes or rollers to flush toxic cleaners? Oil-based paints, solvents, and volumes of toxic cleaners should not enter your septic system. Even latex (acrylic) paints waste should not be washed out into the septic system. Leftover paints and wood stains should be taken to your local household hazardous waste collection centre. Certain household cleaning products are toxic to septic systems, check all your cleaning products to ensure the products you are using to clean the house or wash your clothes are environmentally and septic tank friendly.



For the most part, your septic system's bacteria should recover quickly after small amounts of household cleaning products have entered the system. Of course, some cleaning products are less toxic to your system than others. Labels can help key you into the potential toxicity of various products. The word "**DANGER**" or "**CAUTION**" and "**POISEN**" on the label indicates that the product is highly hazardous. If you are in doubt, check with the suppliers to ensure the products are septic tank friendly.

Chemicals like solvents, oils, paints, disinfectants, and pesticides, household cleaning products and bleaches can kill the helpful bacteria in your septic system. This may 'kill' the system and stop it digesting effluent.

PLEASE CHECK WHAT YOU ARE FLUSHING DOWN YOUR DRAINS AND TOILETS, YOU NEED TO KEEP YOUR SEPTIC TANK AND LEACH FIELD HEALTHY - Remember that your septic system contains a living collection of organisms that digest and treat your waste!. A HEALTHY SEPTIC TANK MEANS A HEALTHY ECOMAX



Some EXAMPLES OF 'SEPTIC SAFE' PRODUCTS AND PRACTICES



LAUNDRY

Choose biodegradable detergents and laundry products which are low or free of **phosphorus**. Examples of commercial products are Gows, BioClean 0.9 grams of Phosphorus per wash, Dynamo concentrate 2.8 per wash, and Coldwater Surf and Biozet concentrate 3.0 grams of Phosphorus per wash. Check the labels of these and any others first, as manufacturers sometimes change their formulations.

- Avoid soap powders with added bleaches, whiteners or '**antibacterial**' agents/disinfectants such as Benzyl Alkonium Chloride (BKC). Your treatment system relies on beneficial bacteria to treat the waste water. Bleaches and other strong disinfectants can kill off these helpful bacteria, seriously reducing the system's effectiveness.
- Pre-soak soiled nappies in 45 grams (about 2 heaped tablespoons) of Bi-carb Soda in a 10 litre bucket of warm water. Soak for 2 hours or more and wash in hot soapy water.
- Washing soda can be used as an effective water and fabric softener. If made into a stiff paste with water it will absorb and remove many stains. Always test on an inconspicuous area of the fabric first.
- A general pre-wash spray can be made up by mixing equal parts of
cloudy ammonia
water
dish washing liquid
Add 1-2 teaspoons of lemon or eucalyptus oil. Put into a spray bottle and shake the mixture every time you use it. Make sure you test it first on an inconspicuous area of the fabric and do not spray it on synthetic fabrics or near your eyes.
- Spread your wash load over several days if possible rather than having just one 'wash day' a week. This distributes the water throughout the week and allows the treatment system to operate more evenly and effectively.
- Extend the life of your Ecomax and avoid blockages by installing a lint filter on your washing machine- a stocking over the outlet hose will do.
- If you've got a blocked drain, use boiling water or a drain eel to clear the line, don't use caustic soda or drain cleaners in a septic tank

KITCHEN

- Use bio-degradable detergent for washing dishes.
- Use low sodium, low phosphorus dishwasher powder.
- Use Washing Soda in hot water to unblock drains.

- Scrape all dishes to remove fats, grease etc. before washing. Wrap the waste in newspaper and place in the rubbish bin.
- Don't dispose of cooking oils or fats down the sink, they solidify and will block the system. Put in a sealed bag or container in the rubbish bin.
- Keep all possible solids out of the system.
- Don't install a garbage grinder unless the system was specifically designed for one. Otherwise it will seriously overload the treatment system.
- Use a sink strainer- this prevents particles of food getting into the septic system. Food scraps can slow down the digestion process and can make solids build up more quickly (so you need more frequent pump-outs)

TOILETS AND BATHROOMS

- Clean with crème cleansers or a small amount of ordinary detergents or a spray bottle type cleaner.
- Bi-carb Soda with a little water can be used as cleaner for toilets, baths and tiles. Do not rub vigorously on plastic bath surfaces or laminex.
- Avoid commercial toilet or 'blue' cleaners. Frequent cleaning (with a sprinkling of Bi-carb soda) is more effective, quicker and prevents odour problems better than a once a week 'scrub'.
- Liquid soaps leave less residue in the hand basin, bath or shower.
- Don't dispose of sanitary napkins or other hygiene products down the toilet.
- Install a low –flow shower head and save water
- Repair leaking taps
- Don't leave taps running unnecessary, for instance when cleaning teeth
- Install a dual- flush cistern for the toilet. And by the way...sometimes it doesn't hurt to let it mellow if it's yellow.

SHOPPING TIP – use low-phosphorus detergents

Changing washing powders can make a difference to the amount of phosphorus entering rivers from on-site systems.

Using phosphorus-free detergents can mean less phosphorus in the waterways and that means less risk of fish kills and toxic algal blooms.

Septic systems don't work well if too much phosphorus is going into the system. Always look for low-phosphorus or phosphorus-free detergents.

If you continue putting chemicals in your septic system

Continued and frequent use of even small amounts of products containing chemicals will likely result in short and long term reduced performance and even significant problems with the operation of your wastewater treatment system.

Use of one or more of these chemicals, once or more a week increases the risk of treatment system problems.

For systems suffering major treatment process problems due to chemicals, immediately eliminate the use of all chemicals and a 'restart' of the system involving a complete pump out and start of an EM® beneficial bacterial additive program may be recommended (contact us for details). There is no point starting any bacterial additive treatment program until the cause of the problem(s) in your treatment system is identified and if possible, eliminated.

Bacterial additive products will not correct, remedy or cover up the use of strong (e.g. Chlorine bleach, Domestos) or milder products containing disinfectant/antiseptic/antibacterial chemicals.

Spas & Swimming Pools

Spas & Pools are a great way to relax. Unfortunately, your septic system was Not designed to handle large quantities Of water from your Spa or Pool. Emptying

Spa and Pool water into your septic system stirs the solids in the tank and pushes them out into the Leach Drains, causing them to clog and fail. Draining your Spa or Pool into a septic system or over the Leach Drain area can overload the system. Instead, drain cooled spa and Pool water onto turf or landscaped areas well away from the septic tank and Leach Drain area, and in accordance with local regulations.