

# Looking after your household Sewerage System



Putting Northland first

**NORTHLAND  
REGIONAL  
COUNCIL**



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## Your on-site effluent treatment and disposal system

If you live in the country, coastal area or in a small rural town, your household effluent (toilet, shower, kitchen and laundry wastewater) probably drains into an on-site treatment system, and from there into the ground somewhere in your backyard.

The standard on-site household effluent system has two parts – treatment and disposal. Treatment systems commonly used for household effluent include:

- Septic tanks; and
- A group of treatment plants known as Aerated Wastewater Treatment Systems (AWTS).

Treatment plants that use sand and textile filters to provide advanced treatment of effluent are also becoming increasingly popular.

When effluent leaves a treatment system it is only partially treated. Final treatment is carried out by the bacteria that are in the soil below the effluent disposal system. The main purpose of the disposal system is to keep the effluent in the soil within the disposal area so this final treatment happens. A variety of disposal systems are available, with each being designed to suit different site conditions and soil types.

The correct operation and continued maintenance of your on-site system is very important. If neglected, they can pollute groundwater and streams, put you and your neighbours' health at risk, and they are expensive to fix.

This book outlines the way some of these systems work and what is required to keep them operating effectively.

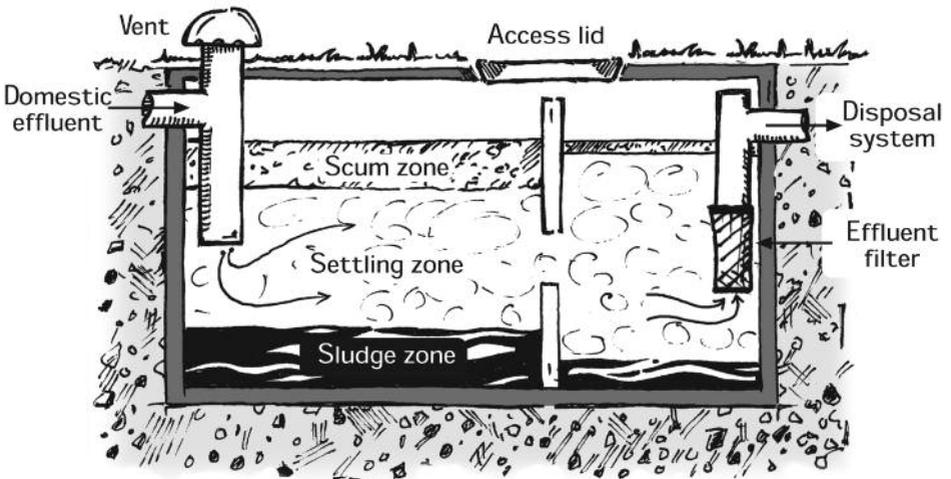
# Septic tanks

Septic tanks prevent the suspended solids in household effluent from entering the disposal system. The escape of excessive suspended solids from a septic tank causes clogging of the disposal system and is the most common cause of early failure.

Three main processes take place in a septic tank:

1. The heavier, solid particles settle to the bottom of the tank forming a sludge layer.
2. Lighter materials such as fat and grease float to the surface forming a scum layer.
3. Within the septic tank there is little or no oxygen, and anaerobic bacteria (bugs that can live without oxygen) break down some of the solids. This helps to reduce the build-up of sludge in the tank.

The effluent that leaves a well-operating septic tank contains only smaller particles that are less likely to clog the disposal system.



*The diagram shows a "standard" septic tank design. More sophisticated designs may be required for heavy load conditions and/or sites with poor soakage or other disposal constraints. Advice on these can be obtained from a qualified professional.*

## Effluent filters

An effluent filter installed on your septic tank outlet will allow only the smaller solids to enter your disposal system. This is a relatively cheap way to significantly reduce the possibility of the early failure of your disposal system.

Most modern septic tanks should have an effluent filter installed on their outlet. With very little modification, effluent filters can also be installed on the outlets of older septic tanks.

## Effluent disposal

When the effluent leaves the septic tank, it is only partially treated. The natural processes occurring within the soils below the disposal system carry out the final treatment of the effluent.

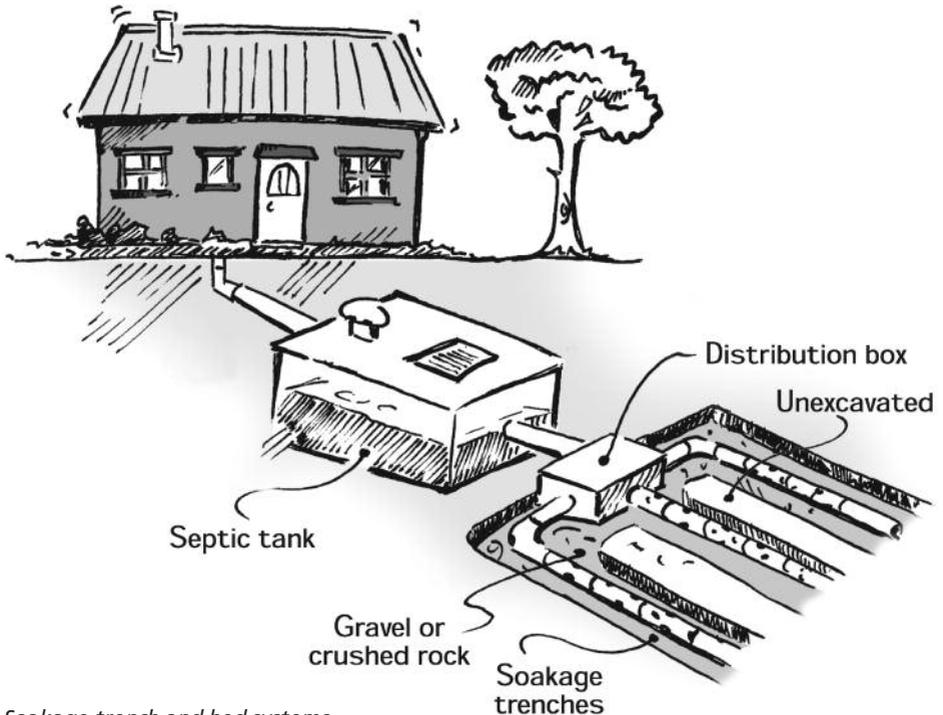
The type and size of the effluent disposal system is normally determined by the site conditions, ground water level and soil type. The following systems are the most commonly used with septic tanks.

### Soakage trench and bed systems

These are the most common type of effluent disposal systems used in association with a septic tank.

Perforated pipes (or in older systems, field tiles) are laid in shallow trenches filled with gravel. Effluent flows out the holes in the pipe and soaks into the surrounding soil (see diagram below). Beds are wider and shallower than normal trenches, but should only be used where it is not possible to use trenches.

Every trench or bed system that has more than one pipe for effluent disposal will have a distribution box so that effluent is evenly distributed between each disposal pipe. It is very important that all the outlets from the distribution box to the disposal pipes are at the same level, as even a small difference can result in the failure of a trench or bed due to overloading.



*Soakage trench and bed systems*

Some distribution boxes may allow the effluent to be manually diverted from one trench/bed to another. This gives the trench/bed that is not receiving any effluent time to rest (recover) while the other is in use. (See: "Regular Maintenance").

### Evapo-Transpiration Seepage (ETS) Systems

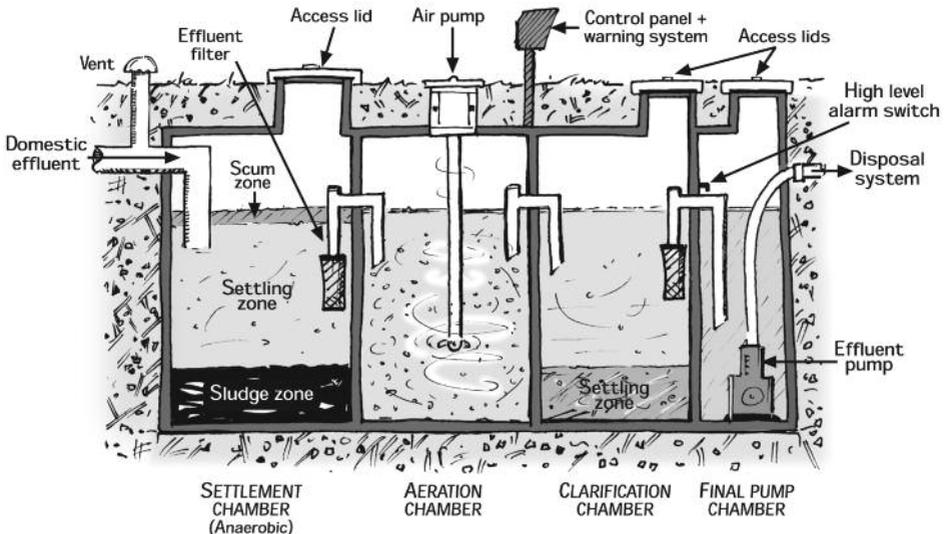
These systems are normally installed where soils have poor soakage. They are similar to soakage trench and bed systems, but are designed to use both soil soakage and selected plants for effluent disposal. This select range of plants must like wet feet as they take up some of the effluent and use the nutrients to grow while the liquid evaporates through their leaves. The disposal area needs to be properly planted to prevent effluent running off during wet periods and causing a problem.

A short list of recommended plants can be found on page 14 of this booklet. Additional information can also be found on our website [www.nrc.govt.nz/septic tanks](http://www.nrc.govt.nz/septic tanks) or by phoning 0800 002 004 to request a full list.

## Aerated Wastewater Treatment Systems

The term 'Aerated Wastewater Treatment Systems (AWTS)' covers a range of types of on-site treatment systems that provide additional treatment to septic tank effluent. Their mechanical pumps require regular maintenance and a continuous power supply.

In general, an AWTS has three parts which may be housed in a single unit or split into more than one unit (see diagram below).



*This is a generalised diagram of an AWTS system. Designs may differ between brands.*

The three main processes that take place in an AWTS are:

### **Settlement and anaerobic treatment**

This takes place in a chamber or tank, and the process is identical to what happens in a septic tank. Solids within the effluent settle and are broken down by anaerobic bacteria (bacteria that can live without oxygen).

### **Aerated treatment**

The effluent then enters a second chamber where aerobic bacteria (bacteria that require oxygen to live) break down the solids further and reduce the number of harmful bugs within the effluent. This normally happens by either passing the effluent over, or through, a material that contains aerobic bacteria or by pumping air directly into the effluent. In some AWTS, a combination of both methods may be used.

### **Final settlement (clarification)**

After the aeration treatment, the effluent is allowed to settle before being pumped to a disposal system.

An AWTS removes a greater amount of solids from the effluent than a septic tank does and therefore problems within the disposal system caused by clogging are less likely. The additional treatment within the aerobic chamber should result in effluent that has fewer harmful bugs and nutrients, so it is less likely to be harmful to the environment.

The installation of an AWTS is particularly useful in areas where there is a high groundwater table that needs protection or where there are poorly draining soils.

If you are unsure whether your on-site effluent treatment system is an AWTS, please call the Northland Regional Council for advice on 0800 002 004.

## **Effluent disposal**

Effluent from an AWTS is commonly disposed of through dripper irrigation lines, which are flexible pipes with small pressure-compensating drippers installed along their length. The drippers should be self flushing, which helps prevent them becoming clogged, and there should also be “flushing valves” at the end of each line for maintenance purposes.

The irrigation line is placed either under the soil surface or on the surface and covered with mulch, post peelings or a similar material. The irrigation lines can be laid around ornamental gardens to water plants, and are a useful means of recycling the effluent. Care is needed when handling the irrigation lines or working within any planted areas as there is still a significant health risk associated with this treated effluent.

It is also common for irrigation line disposal systems on sloping land where soils have poor soakage to be specially planted. These plants take up some of the effluent and use the nutrients to grow while the liquid evaporates through their leaves, and they can also prevent some of the rain from falling onto the disposal area. The disposal area needs to be properly planted to prevent effluent from running off during wet periods and causing a problem.

A short list of recommended plants can be found on page 14 of this booklet. Additional information can also be found on our website [www.nrc.govt.nz/septic tanks](http://www.nrc.govt.nz/septic tanks) or by phoning 0800 002 004 to request a full list.

# Holiday homes

A common problem in Northland is that many holiday homes are used for only short periods of time, during which there are often many people in residence. When large numbers of people stay at holiday homes, they can exceed the capacity of the on-site effluent treatment and disposal system, resulting in poor effluent treatment and possible failure of the disposal system. This can lead to the contamination of ground water, streams and coastal water, particularly where there are a number of holiday homes located together, all or many of them with poorly operating on-site effluent systems.

## Shock loading

Shock loading happens when a sudden and large volume of effluent enters a treatment system that is not big enough to cope. This normally results in excessive solid material being washed out of the septic tank into the disposal system, or in AWTS type systems, entering the other treatment chambers and significantly reducing the treatment capacity of the system. The consequent failure of the disposal system can really spoil a holiday!

The simplest solution to this problem is to ensure that your system is large enough to cope with the number of people that would normally occupy the house at any one time. Alternatively, you can limit the number of occupants at the holiday home, particularly if you are renting it out.

## Septic tanks

The standard-size septic tank (4,500 litres) is generally sufficient to provide adequate treatment for up to eight people under normal operating conditions. The number of people the septic tank can handle can be increased by desludging the tank each year.

If your septic tank does not have an effluent filter fitted to the outlet, then installing one will reduce the risk of your disposal system failing during long periods of intensive use.

## Aerated Wastewater Treatment Systems (AWTS)

If you are installing an AWTS in a holiday home, then you will need to check with the system's manufacturer or supplier to make sure it is appropriate for your particular situation. You should also check that the size of the first tank (which acts as a septic tank) is sufficient for the number of people that would normally use your holiday home. If not, a simple cost-effective solution may be to install a standard septic tank before the AWTS.

The aerobic bacteria in an AWTS need a regular source of effluent to maintain their population. When an AWTS receives effluent after a long period of non-use, there will initially be too few aerobic bacteria to effectively treat the effluent. This will increase the risk of the final effluent filter or disposal system becoming clogged, especially if it is using irrigation lines, and may cause odour problems. This initial period of inadequate treatment will also reduce the environmental protection that these systems are installed to provide.

It is a good idea to have someone use the house for a few days prior to a large number of guests arriving so the bacteria have a chance to become active and increase their numbers. This simple practice will help the AWTS to treat the effluent more effectively and reduce the potential for major problems.

Make sure that your AWTS has a power supply at all times and is switched on even when the holiday home is not occupied, as this is essential to keep the aerobic bacteria alive.

If you have any questions regarding AWTS or other mechanical treatment systems, please contact the Northland Regional Council for advice on 0800 002 004.

## Other treatment systems

There is a variety of alternative on-site treatment systems that can also be used for domestic effluent. Three examples are:

### Composting toilets

These systems consist of a separate vault that collects the toilet waste only. Some composting toilets also collect the urine separately prior to it entering the composting pit. Generally, very little liquid effluent is produced and the solid waste is composted to produce a safer, less offensive final product. To get the best results from these systems, a greater amount of regular attention is required than with other treatment systems. The resulting compost will still need to be buried for up to a year to make it safe for human contact, particularly if it is to be used as fertiliser in a vegetable garden. Your District Council Health Inspector should be able to provide more detail on what is deemed safe.

If you have a composting toilet, the grey water (water from showers, kitchen and laundry) from your house also needs to be properly treated and disposed of on your property. The grey water system will normally be similar to a standard septic tank system, which allows for the settlement and collection of solids from the grey water. The liquid effluent produced from the composting material and, if your composting toilet does so, the collected urine also requires proper treatment and disposal. The most cost effective method will normally be through the grey water system.

### Vermiculture systems

Also known as Biolytic filtrations, these treatment systems consist of a chamber in which both liquid and solid effluent is passed over a bed of organic matter containing earthworms. The effluent filters down through the organic layer leaving the bulk of the solid material behind to be broken down into compost by bacteria and earthworms. The earthworms also assist with the aeration of the organic waste, which reduces any smell. Any remaining liquid effluent is collected and disposed of in a similar manner to effluent from a septic tank.

These systems require more maintenance than standard septic tank systems and the manufacturer/supplier of your system should provide a maintenance schedule that must be followed. Most of these systems are not designed to treat all the liquid effluent from a dwelling and you will also require a separate grey water system.

The recommendations in this booklet regarding septic tank treatment and disposal systems also apply to grey water systems.

## Sand and Textile Filter systems

These types of systems provide a greater level of effluent treatment than an AWTS and are also considered suitable for effectively handling shock loading. This additional treatment is achieved by small amounts of effluent being passed through the filter material at regular intervals.

These systems normally have mechanical pumps that require a continuous power supply, and the treated effluent is usually disposed of in the same manner as effluent from an AWTS. The mechanical pumps and filter material require regular maintenance, as does the irrigation line, to ensure they are operating correctly. A contract with the manufacturer of your system, or their authorised agent, will be needed to undertake this regular maintenance.

## System failure

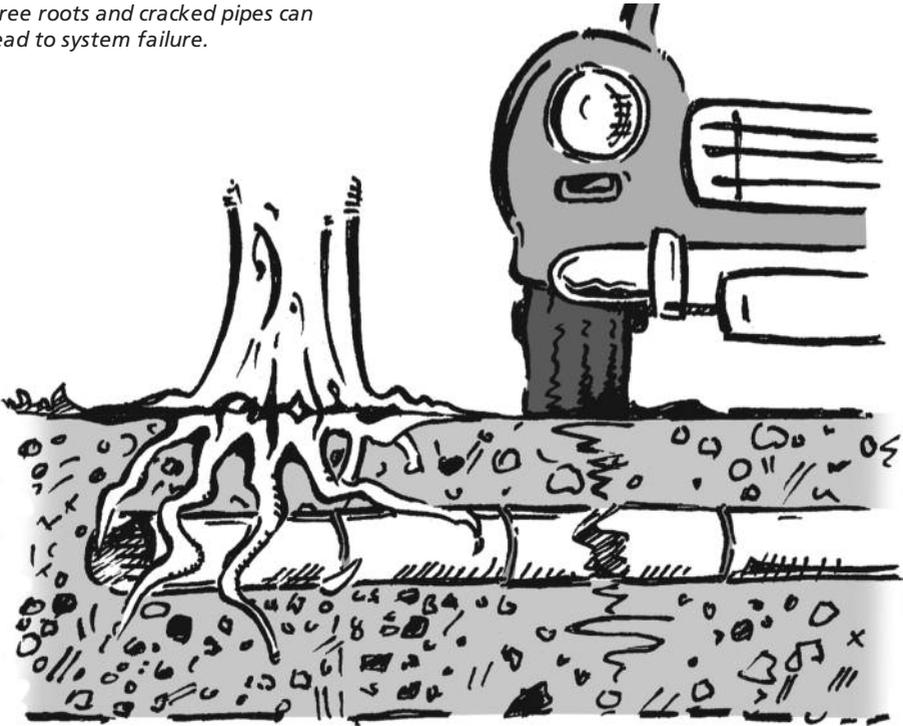
If your effluent treatment and disposal system is used correctly and is well maintained, it should give many years of trouble-free service. However, neglect, damage and even long years of use can cause your system to fail.

### How can you tell your system is failing?

If you notice one or more of the following, your system is probably failing and you must take urgent action to get it working properly again:

- Sinks and toilets are slow to drain;
- Your treatment system overflows, most likely from a vent, or there is an overflow occurring from a gully trap;
- You smell effluent near either the treatment system or disposal system;
- Black and slimy areas are forming on the ground where your disposal system is located;
- Your disposal area is on a slope and there is lush, dark green grass growth down the slope, particularly during summer; or
- Your system has mechanical pumps installed, such as an AWTS, and an alarm bell or light is going (a high effluent level warning system has been activated).

*Tree roots and cracked pipes can lead to system failure.*



## **Why do systems fail?**

When an on-site effluent treatment and disposal system starts giving problems, it is usually because the disposal system has begun to fail. Failure of the disposal system can be caused by:

- A build-up of sludge in the septic tank. If the septic tank is not pumped out often enough (see: Regular Maintenance), excessive solids and fats may escape into the disposal system, causing it to clog and reduce the amount of effluent that can soak into the surrounding soil.
- Tree roots may extend into the disposal system and cause a blockage, preventing the effluent from getting all the way through the disposal system. This overloads a small part of the disposal system.
- Heavy stock or vehicles may fracture the disposal system. This will also prevent effluent getting all the way through the disposal system and overloads a small part of it.
- Poor location of the disposal system in waterlogged areas where the effluent cannot soak into soil that is already wet.
- The 'good' bacteria in the treatment system have been 'killed off' by unsuitable materials being put down household drains.
- The distribution box has been damaged or not maintained so that effluent is not being evenly distributed to the entire disposal system.

## Other causes of system failure

### **Aerated Wastewater Treatment Systems (AWTS) and other mechanical treatment systems.**

If the power supply to a mechanical treatment system is disconnected, then the effluent and air pumps will not operate. In the event of a power supply failure to the house, the occupants of the house should minimise the volume of effluent entering the system until the power supply is restored. This may not be an issue if water supply also requires a pump.

If excessive effluent does enter the system, there is the risk of effluent from the settlement chamber overflowing into other compartments. If this does occur, then the system may need to be desludged so that it operates correctly. Depending on the duration of the power failure, the lack of oxygen within the aerobic chamber may also result in the death of all the aerobic bacteria.

### **Effluent filters**

An effluent filter has small holes that will eventually become clogged with natural organic growth, and the filter needs to be cleaned regularly to prevent this from happening. If there is an excessive amount of solids in the septic tank, or the tank is undersized, then it is likely that the filter will become blocked more frequently. If your filter does become blocked, effluent will build up within the tank and overflow through the vent or from the nearest drainage opening (e.g. a gully trap). If this does occur, have the septic tank desludged and clean the filter. Do not remove the filter completely, as the solids will then flow directly into the disposal system and cause it to fail.

## **Why is treatment system failure a problem?**

- Effluent above the surface of the ground is a health hazard to your family, your pets and your neighbours.
- Birds, rats and other animals may spread disease from the effluent.
- A mosquito and fly breeding ground may develop.
- Your own or other people's underground water supplies may become polluted.
- Streams, beaches and shellfish beds may become polluted.

# The “dos” and “don’ts” of operating your treatment system

## Keep the treatment system ‘alive’

Household cleaners, strong detergents and toxic chemicals can kill the ‘good’ bacteria within treatment systems. To keep these bacteria alive:

- Do:**
- ✓ Use biodegradable detergents and cleaners;
  - ✓ Check your detergents and cleaners to see if they are suitable for use with an on-site treatment system; and
  - ✓ Limit as much as possible the use of bleach-based products such as whiteners, nappy soakers and stain removers.
- Don’t:**
- ✗ Pour acids, pesticides, medicines, paint, thinners, engine oil or other materials which will kill the bacteria into your treatment system. (These should be disposed of properly at your local transfer station or landfill);
  - ✗ Pour grease or cooking oil into your treatment system; or
  - ✗ Use septic tank “cleaning chemicals”.

## Reduce the solid load

To reduce the sludge build-up in your treatment system:

- Do:**
- ✓ Scrape all your dishes to remove fats and food particles before washing; and
  - ✓ Shake sand and dirt from clothes before you wash them.
- Don’t:**
- ✗ Put sanitary pads, tampons, paper tissues, paper towels, disposable nappies, nappy liners, cigarettes or rags into the system;
  - ✗ Use a kitchen waste disposal unit; or
  - ✗ Put compostable vegetable matter into the treatment system unless it is specified as safe by the manufacturer.

## Reduce the liquid load

Small loads of effluent don’t pass through the treatment system as quickly. This gives the solids in the effluent more time to settle out of the liquid rather than escaping out of the tank into the disposal system.

Less effluent going into the system also means less effluent coming out. Therefore, the soils beneath the disposal system don’t get as wet, providing a more effective final treatment for the effluent.

To reduce the amount of effluent going into the tank:

- Do:**
- ✓ Install water-saving devices such as dual flush toilets;
  - ✓ Take showers instead of baths; and
  - ✓ Fix leaking taps.

- Don't:** ✘ Wash clothes until you have a full load;
- ✘ Do all the clothes washing on the same day. If you normally do more than two full loads of washing a week, try to spread them out over a few days;
  - ✘ Empty large volumes of water into the treatment system from such things as spa pools; or
  - ✘ Allow stormwater to enter the treatment system, either from the roof or surrounding land.

## Protect the disposal system

- Do:** ✓ Restrict access to any areas of land that have been specially planted as part of the disposal system.
- Don't:** ✘ Allow vehicle or stock access to areas where a disposal system has been installed;
- ✘ Allow stormwater to enter the disposal area, either from the roof or surrounding land; or
  - ✘ Grow deep-rooting trees or shrubs in the disposal area.

# Regular maintenance

## Septic tanks

A septic tank must be pumped out (desludged) regularly to remove excess sludge and scum. If the septic tank is not desludged often enough, excessive solids and fats will cause clogging of your disposal system and its early failure. The effluent filter fitted to your septic tank outlet should also be cleaned when your septic tank is desludged.

It should be noted that replacing a failed disposal system can cost over ten times as much as getting a septic tank desludged.

How often a septic tank needs to be desludged depends mainly on the number of people using it and the size of the tank. For households with two to four people, a standard-size septic tank may need to be desludged approximately every three to five years. If your septic tank has an effluent filter on the outlet, then it may need to be desludged less often. However, it is a good idea to have the sludge levels in your septic tank checked approximately every three years to determine when desludging will be necessary. For motels and camping grounds, or for larger communal tanks serving several houses, septic tanks may have to be desludged more often.

A septic tank is desludged by putting a suction hose through the access lid – not down the “mushroom vent” – so keeping the access lid accessible and not covered over is very important. Also, never wash out your tank after it has been desludged, as the bacteria and solids left behind are required to restart biological activity.

If you need advice, contact your local cleaning contractor or your District Council plumbing and drainage inspector.

## **Aerated Wastewater Treatment Systems (AWTS) and other mechanical treatment systems**

All AWTS and other mechanical treatment systems require regular service and maintenance checks by a suitably qualified person to ensure the system continues to work properly. The manufacturer of the system, or their authorised agent, will have a service and maintenance contract that must be entered into when the system is installed. This service and maintenance contract should also cover the disposal system, especially if it is a dripper irrigation line system. A well maintained and operating system will help reduce the build up of slime within the irrigation lines and drippers, thereby reducing the risk of the drippers becoming clogged. There will be an annual fee associated with this maintenance contract.

Sludge will accumulate in the various parts of a system and should be pumped out regularly in accordance with the recommendations of the system's manufacturer.

## **Planted disposal areas**

If you have an evapo-transpiration seepage system or a planted irrigation line disposal area, then the plants should be well looked after to ensure that they do their job to maximum effect. Maintenance should include replanting and pruning of plants to promote healthy growth.

## **Distribution box and alternating soakage trenches or beds**

Every time you check your septic tank, you should also check your distribution box to make sure all outlet pipes are at the same level and there are no obstructions, such as algal growth. For ease of maintenance, distribution boxes must be accessible and not covered over.

If your disposal soakage trench or bed system has a distribution box that allows you to manually divert effluent from one trench/bed to another, then the trenches in use should be rested at least every three to six months. Alternatively, in some areas – particularly with poor soils – it is recommended that you use all the trenches/beds during the winter months and then rest some trenches/beds during the summer months. Alternating the trenches/beds in use is normally done by adjusting a baffle or valve in the distribution box.

## **Surface water cut-off drains**

If your disposal system is located on a slope, a surface water cut-off drain will usually be installed above the effluent disposal system to prevent stormwater runoff from the slope entering the disposal area. All surface water cut-off drains need to be maintained to make sure they work properly. This may include removing excess grass or plant growth from the drains and making sure there are no other obstructions to prevent the free flow of water.

Prior to winter, it is a good idea to give all surface water cut-off drains a quick visual check and to carry out any required maintenance as soon as possible. If a surface water cut-off drain is not working properly, the excess stormwater entering the disposal area will cause failure of the disposal system and result in effluent flowing down the slope.

# Do you know where your system is?

Your on-site effluent treatment and disposal system is probably quite near to your house. It is important to know the location of your system so regular maintenance and repairs can be carried out. When you locate your treatment and disposal system, draw a rough sketch map showing your house, the treatment system, the disposal system and any permanent features on your property. Keep the map with your other household documents.

## Locating your septic tank

- First look for a “mushroom vent” sticking out of the ground, or the access lid if it is not covered with grass. If you cannot see an access lid, look for a mound or dip in the ground by the mushroom vent, or a place where the grass is a bit thinner than elsewhere. Following the effluent pipe from your house will also help, and if necessary, you can probe the soil with a metal rod.
- If you are not the original owner of the house, then locating the disposal system can be more difficult. It will usually be downhill from the house and treatment system. The trench/bed system may have vents at the end of each disposal pipe which will be above ground, or its location will be apparent because the grass along the soakage lines is usually greener during the summer months. Alternatively, you may need to probe the back yard with a metal rod to locate it.
- If you have no luck, phone a drain layer or your District Council’s plumbing and drainage inspector. The District Council may have a drainage plan for your property.

## AWTS and other mechanical treatment systems

Your system is likely to have one or more of the following above ground level that are close to the treatment system and will allow you to locate it:

- An electrical box;
- Part of the treatment system that allows easy access for maintenance;
- An air pump that supplies the aeration chamber; or
- A high effluent level warning system (either a light or alarm).

The irrigation line disposal system should be easy to see if it has been installed within an ornamental garden. The lines should also be easily located by the flushing valves at the end of each line which will be above ground. If the irrigation lines are not easy to see, then you will need to contact the maintenance contractor for the system, as they should have plans of its location.

# Suitable plants for effluent disposal areas

## Native shrubs, trees and ground covers

Kiokio (fern)	<i>Blechnum novaezelandiae</i>
Putaputaweta	<i>Carpodetus serratus</i>
Sand coprosma (ground cover)	<i>Coprosma acerosa</i>
Mingimingi	<i>C. propinqua</i>
Taupata	<i>C. repens</i>
Ti kouka, cabbage tree (fast)	<i>Cordyline australis</i>
Karaka (large tree)	<i>Corynocarpus laevigatus</i>
Tree fuchsia	<i>Fuchsia excorticata</i>
Koromiko, hebe	<i>Hebe stricta</i>
Houhere, lacebark (fast)	<i>Hoheria populnea</i>
Pukatea (large tree)	<i>Laurelia novae-zelandiae</i>
Manuka	<i>Leptospermum scoparium</i>
Kawakawa	<i>Macropiper excelsum</i>
Puriri (large tree)	<i>Vitex lucens</i>

## Grass-like plants

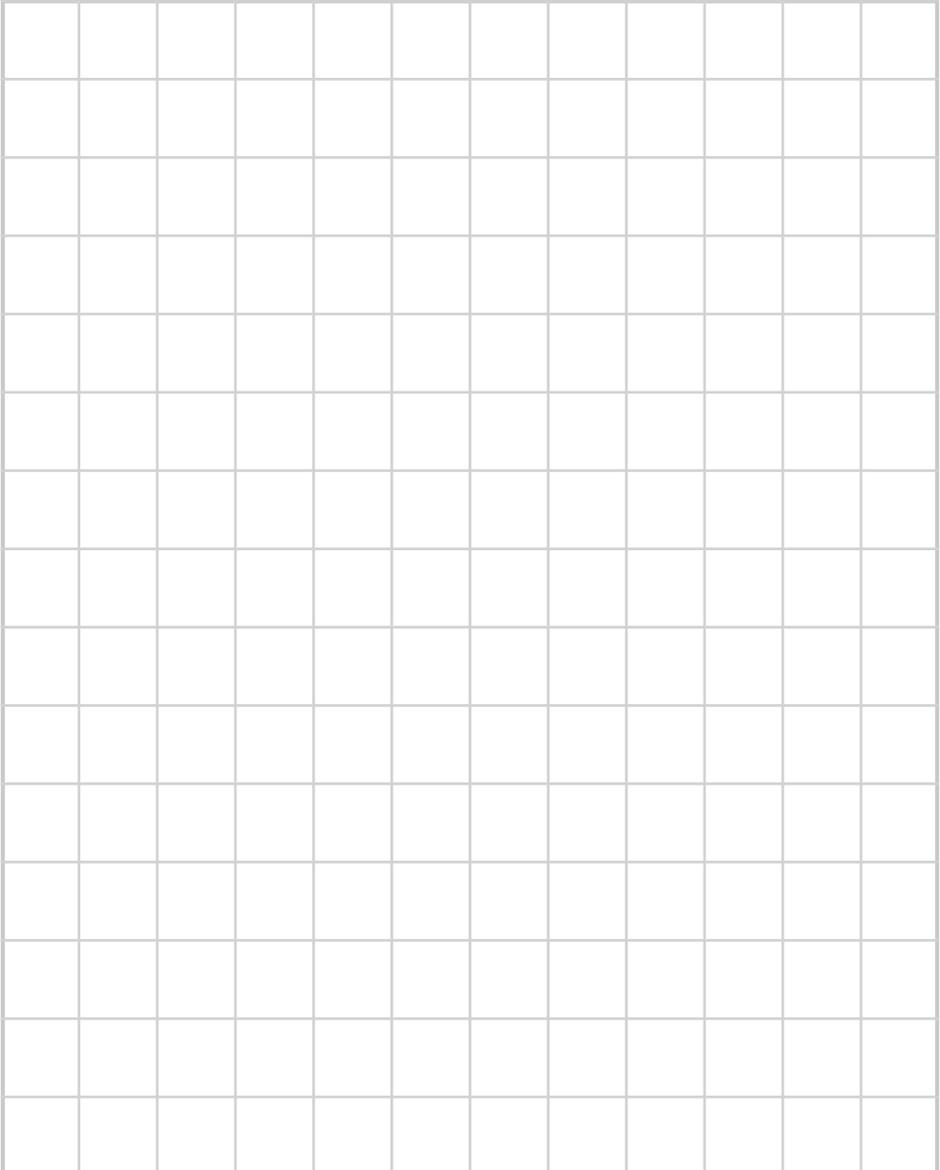
Oioi, jointed rush	<i>Apodasmia similis</i>
Rengarenga, rock lily	<i>Arthropodium cirratum</i>
Rautahi, tussock sedge	<i>Carex geminata</i>
Purei, pukio, tussock sedge	<i>Carex secta</i>
Toetoe *	<i>Cotaderia fulvida</i>
Umbrella sedge	<i>Cyperus ustulatus</i>
Turutu, NZ blueberry	<i>Dianella nigra</i>
Pepepe, toetoe tuhara	<i>Machaerina sinclarii</i>
Harakeke, flax (fast)	<i>Phormium tenax</i>

\* Do not use invasive exotic pampas grasses.

Additional information can also be found on our website [www.nrc.govt.nz/septic tanks](http://www.nrc.govt.nz/septic tanks) or by phoning 0800 002 004 to request a full list.

# Your map

Measure the distance from the house to the vent on the system, and the distances from the vent to the edges of the disposal system. Do not worry whether or not your drawing is to scale.









## Putting Northland first

**WHĀNGĀREI:** 36 Water Street, Private Bag 9021, Whāngārei Mail Centre,  
Whāngārei 0148, New Zealand. Phone 09 438 4639, Fax 09 438 0012.

**ŌPUA:** Unit 10, Industrial Marine Park, Ōpua; Phone 09 402 7516, Fax 09 402 7510.

**DARGAVILLE:** 61B Victoria Street, Dargaville; Phone 09 439 3300, Fax 09 439 3301.

**KAITĀIA:** 192 Commerce Street, Kaitāia; Phone 09 408 6600, Fax 09 408 6601.

Freephone: 0800 002 004 24/7 Environmental Hotline: 0800 504 639

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Facebook: [www.facebook.com/NorthlandRegionalCouncil](http://www.facebook.com/NorthlandRegionalCouncil)

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