

Residential Wastewater Systems Guide



Installing and maintaining a domestic wastewater system on your property



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What is this booklet about?

Home wastewater systems are used on properties that are not connected to a community wastewater network. In the Gisborne district it's all areas outside Gisborne city, Te Karaka, and Te Puia townships. It includes Wainui beach, Makaraka, and rural and coastal areas.

When it works well, managing your own wastewater system is reasonably easy, but if something goes wrong, it can be unpleasant and expensive to fix. This booklet is for people who use or need to install an onsite wastewater system – commonly referred to as a septic tank – and will help you get it right from the start.



What are onsite Wastewater Systems

Onsite wastewater systems are used to dispose of all household wastewater that goes down the drains or toilet. With an onsite wastewater system, there is no ‘flush and forget’ – all your liquid household waste has to be safely and hygienically processed on your property, in your wastewater system, which itself is a living system. An effective system contains and processes waste without contaminating ground water or surface water, or having adverse affects on the environment.

Types of systems

There are **two** main types of onsite wastewater systems:

- ↔ one or more septic tanks with a gravity or pumped effluent disposal bed ↔ a home treatment system that usually has drifter line disposal.
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Your wastewater system may include:

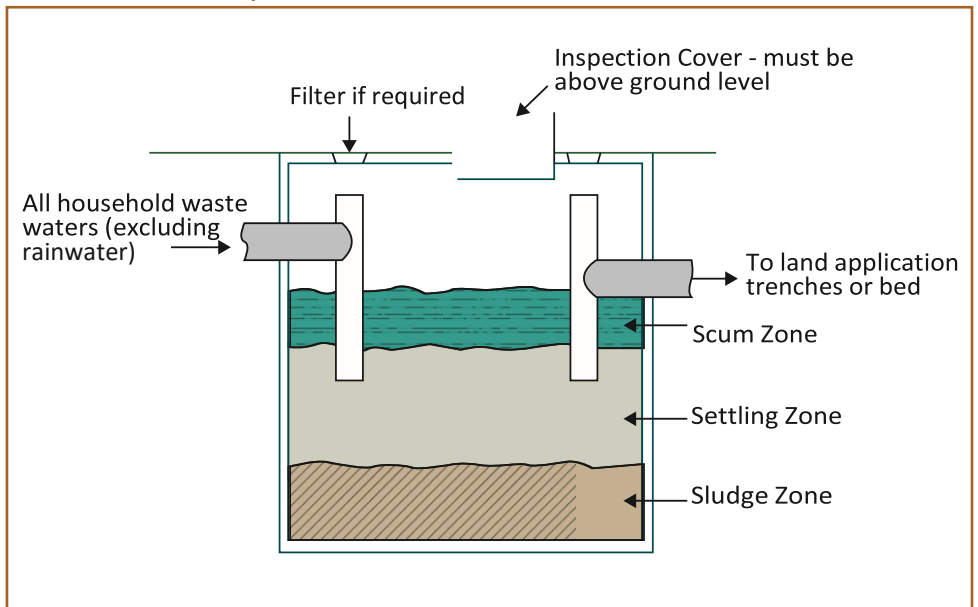
- ↔ sanitary plumbing fixtures connected to drain pipes that take sewage and sullage – that’s the liquid from kitchens, wash basins, toilets and laundries – to the septic tank
- ↔ treatment tanks — passive, aerated or filtered
- ↔ a distribution system, pump, siphon, or gravity fed
- ↔ an effluent disposal system, trenches, beds, mounds, or drifter lines.

How the system works

The type of system you install will depend on your property. Most systems work in a similar way where wastewater is gradually separated, treated, and dispersed – with the help of natural organisms. Just as we have ‘good bugs’ in our stomachs, septic tanks have anaerobic bacteria that partially breaks down solid waste. Your septic tank depends on these organisms to work properly, which is why you must keep your septic tank a chemical free zone.

When you flush the toilet or run the tap, sewage and sullage flow to the septic tank where the solid matter settles on the bottom and forms sludge. Fats and lighter matter float to the surface to form a scum.

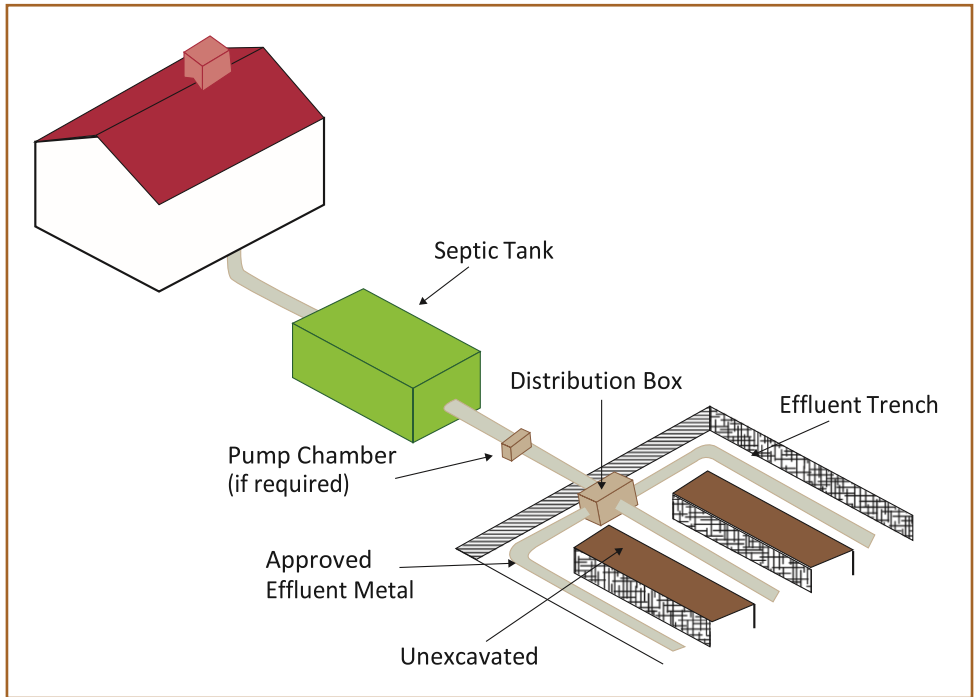
Conventional Septic Tank



The intermediate liquid (settling zone) that has had most of the organic matter digested by your tank’s ‘bugs’ is eventually discharged into an effluent dispersal system constructed in the ground.

The liquid is further treated by organisms that live in the drainage metal and soil.

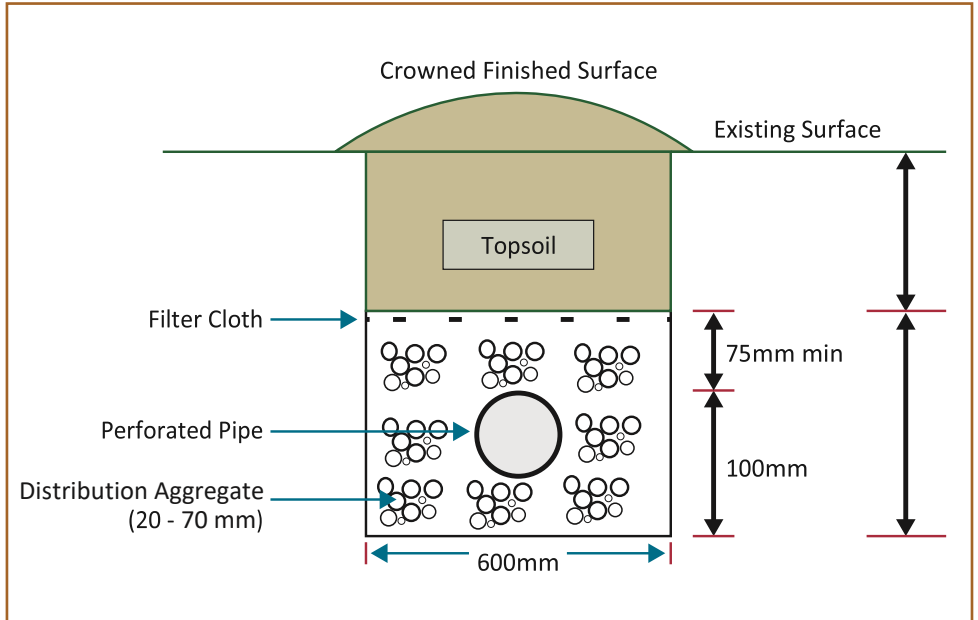
Septic Tank and Effluent Trenches



An effluent trench or bed is dug deep enough for treated wastewater to safely soak into the ground without contaminating the groundwater. The trench or bed is lined with clean washed river metal, with the distribution pipe laid flat within the metal. A textile filter cloth is laid over the metal before backfilling to prevent the downward movement of soil that could clog the drainage metal. The top of the trench system must be crowned to stop rainwater pooling.

Disposing chemicals of any kind – paint, disinfectant, petrol, flammable liquid, bleaches – down your drains or toilets can wipe out the organisms your tank needs to work properly.

Conventional Trench System



Installing an onsite wastewater system

If you're installing a new system, it's important that the tanks and effluent dispersal system are the right size to work efficiently. Talk to a professional about the best type of system, and the best size and location for your property.

Wastewater treatment professionals

Council maintains a list of recognised professionals who do site assessments and design for onsite wastewater systems in the Gisborne district. They can evaluate the soil type and soak rate, and use a set of guidelines to design a system that will suit the building and the property, and protect the surrounding environment.

Consents for your wastewater system

Building consents

In general, installing a wastewater system will require some degree of site evaluation and design before a building consent can be issued. You will need to provide details of this work, such as a scale site plan and details of the system type, size and layout, with your building consent application. Council will only accept the application if design work has been done by a recognised person, or a recognised wastewater engineer, and if the site assessment and design is accurate. The most important part of this evaluation is an accurate assessment of the soil's soakage capabilities. Sands and gravels soak away quickly, very dense and thick clays may have very limited or no soakage. The qualified site assessor/designer recognises these vast differences and will design a system that is appropriate for the site. There are no shortcuts. A wrongly designed system will fail. This failure will result in a smelly system that will discharge to the surface. It is a health risk to your family and the neighbours and can contaminate adjacent steams or drains.

Resource consents

Onsite wastewater systems must meet the environmental standards in the Resource Management Act and the Tairāwhiti Resource Management Plan. They must also meet the functional and durability requirements of the New Zealand Building Code and the Building Act.

Exempt work

Some like-for-like building maintenance projects don't need a building consent under exemptions in Schedule 1 of the Building Act. Although replacing a failed effluent line is included in the examples in the schedule, it is likely to still need a building consent. A failed system won't comply with the regional rules under the Tairāwhiti Resource Management Plan and therefore the like-for-like option does not apply.



Looking after your system

These tips will help to keep your wastewater system working safely and reliably.

- ↩ Desludge every three to five years or when scum and sludge take up two thirds of the tank – or the first stage of a two-stage system.
- ↩ Protect your tank and effluent absorption field from vehicles and heavy animals such as cattle and horses.
- ↩ If you have a grease trap, clean it out regularly.
- ↩ Keep the vent and/or access cover of the septic tank exposed.
- ↩ If you have an outlet filter, have it inspected and cleaned.

Problems can arise when systems aren't maintained and when absorption areas get damaged, blocked or over saturated. Look out for:

- ↩ wet or soggy absorption area with wastewater ponding on the ground
- ↩ a bad smell near the septic tank or absorption area
- ↩ drains and toilets run slowly
- ↩ grease trap is full or blocked or overflowing
- ↩ septic tank overflows.

If things go wrong

A failed onsite wastewater system is a serious health and environmental hazard and can lead to:

- ↩ the spread of infectious disease
- ↩ an increase in mosquitoes, flies and rodents
- ↩ pollution of waterways, beaches, streams and shellfish beds
- ↩ contamination of bores, wells and groundwater
- ↩ air pollution and odours.

Regularly cleaning and maintaining your system will help to prevent costly failures.

Costs

Costs vary between a small basic septic tank system to more complex system or systems for sites with limited land or poor soakage. Transport costs to remote sites could add significantly to these costs.

The cost of cleaning your tank or servicing your system can also vary depending on where you live. This is because contractors generally charge for time and mileage.

Systems that have been installed since 2002 should have a filter on the outlet from the second tank or chamber. These must be cleaned regularly, or the filter will clog and cause backups in the tank.

Systems with a pump, home treatment plants, and low pressure dosed effluent systems have ongoing power costs. Some need bi-annual maintenance. All maintenance is at the homeowner's cost.

Specialists and service agents

Some wastewater professionals carry out onsite assessment and design work specific to their brand of system. Although you can use the information from your initial assessment to get quotes from a number of drainlayers.

You can use any of the recognised wastewater site assessors and system designers listed below. However please note, the list is not comprehensive, council does not necessarily endorse products or services provided and you may wish to seek other providers.

Wastewater site assessors

Land Development & Exploration LDE 32 Grey Street, Gisborne	Phone: (06) 867 3035 Mobile: 027 4989 636 Email: info@lde.co.nz Website: www.lde.co.nz
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Gary Thompson 176 Stanley Road, Gisborne	Phone: (06) 867 7915 Mobile: 027 4410 895 Email: g.thompson@xtra.co.nz
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Terry Taylor Drainage 89 Customhouse Street, Gisborne	Phone: (06) 868 5383 Email: terrytaylor@xtra.co.nz
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Alan Hall 8 Ingram Road, Gisborne	Phone: (06) 862 5597
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Carl Horne 834 Gladstone Road	Phone: (06) 868 1543 Mobile: 021 903 061 Email: carlandtech@xtra.co.nz
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WSP Consultants - Sarah Millar	Phone: (06) 868 5199 Mobile: 021 240 5541 Email: sarah.millar@wsp.com
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Septic tank cleaning specialists

Some local agents who offer septic tank cleaning services will help you keep your system working well.

Regularly cleaning your tank will keep

Wayne's Waste	Phone: (06) 867 3606
Terry Taylor Drainage	Phone: (06) 868 5383
Baywaste/Envirowaste	Phone: (06) 868 6007
Chaffey's Waste Services Ltd	Phone: (06) 8645865 (Ruatoria)
Septic Solutions Ltd	Phone: (06) 864 4831 (Te Araroa)
Fulton Hogan	Phone: (06) 869 1825

Domestic wastewater treatment plants - service agents

There are several companies and agents in Gisborne that offer tank maintenance services.

Type of wastewater system	Recommended servicing frequency	Agent contacts
Bio-Cycle	6 monthly	Mark Varney
Oasis Clearwater	6 monthly	Mobile: 027 246 2715 Website: thewatertankman.co.nz
Bio-Cycle	6 monthly	Thompson Drainage Phone: (06) 867 4902 Mobile: 027 445 9720 Email: thompsondrainage@xtra.co.nz
Biolytix	Annually	
Aquablue	6 monthly	
Devan Blue	6 monthly	
NaturalFlow	Annually	Waterflow NZ Ltd Phone: 0800 628 356 Email: sales@naturalflow.co.nz

Type of wastewater system	Recommended servicing frequency	Agent contacts
Integra S-Series	6 monthly	Pauls Plumbing and Drainage Phone: (06) 863 3062 Email: paulkor@slingshot.co.nz
KiwiTreat	6 monthly	KiwiTreat Limited Rangiora Phone: (03) 312 5787
HYNDS Lifestyle	6 monthly	Terry Taylor Drainage Phone: (06) 868 5383 Email: terrytaylor@xtra.co.nz
Innoflow - Advantex	Annually	Walters Plumbing Phone: ((06) 867 3065 Email: waltersplumbing@xtra.co.nz
AirTech 9000	6 monthly	Steve Wolters Plumbing Phone: (06) 868 8335 Mobile: 0027 483 9663
Watercycle	Annually	Brian Rofe Plumbing Mobile: 0272 416 850 Email: brofe@xtra.co.nz
Septech Turbo Jet 2000	Annually	Contact Council for advice Phone: (06) 867 2049
Gould Tanks	6 monthly	Contact Council for advice Phone: (06) 867 2049
Enviroflow	6 monthly	Ross Brown Mobile: 021 081 0223
General Servicing		Brian Rofe Plumbing Phone: (06) 867 5292 Mobile: 0272 416 850 Email: brofe@xtra.co.nz



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