



TOWARDS BETTER ONSITE WASTEWATER MANAGEMENT IN VICTORIA - COMMUNITY EDUCATION SERIES



FACT SHEET 7: IN-SITU SEPTIC TANK SYSTEMS AND OTHER HISTORIC SEPTIC TANK DESIGNS

This fact sheet focuses on very old septic systems that were designed and installed well before the modern guidelines and codes of practice were introduced. These systems may need to be upgraded to meet current requirements and improve performance.



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7.1 WHAT IS AN IN-SITU SEPTIC TANK?

An in-situ septic tank is an in ground tank made on site out of bricks or concrete. Like all septic tanks it contains a living ecosystem with good bugs that digest and treat wastewater from your kitchen, bathroom, laundry and toilet. The purpose of a septic tank is to allow solid materials to settle, allow the good bugs to breakdown some of the waste material, and act as a storage chamber for undigested materials.

A healthy septic tank should have three layers: a layer of fats forming a scum on the surface which helps to reduce odours; a clear layer in the middle also called effluent; and a layer of solids or sludge at the bottom. The effluent flows out of the tank when new effluent enters and is discharged to an absorption field (refer to Diagram 2).

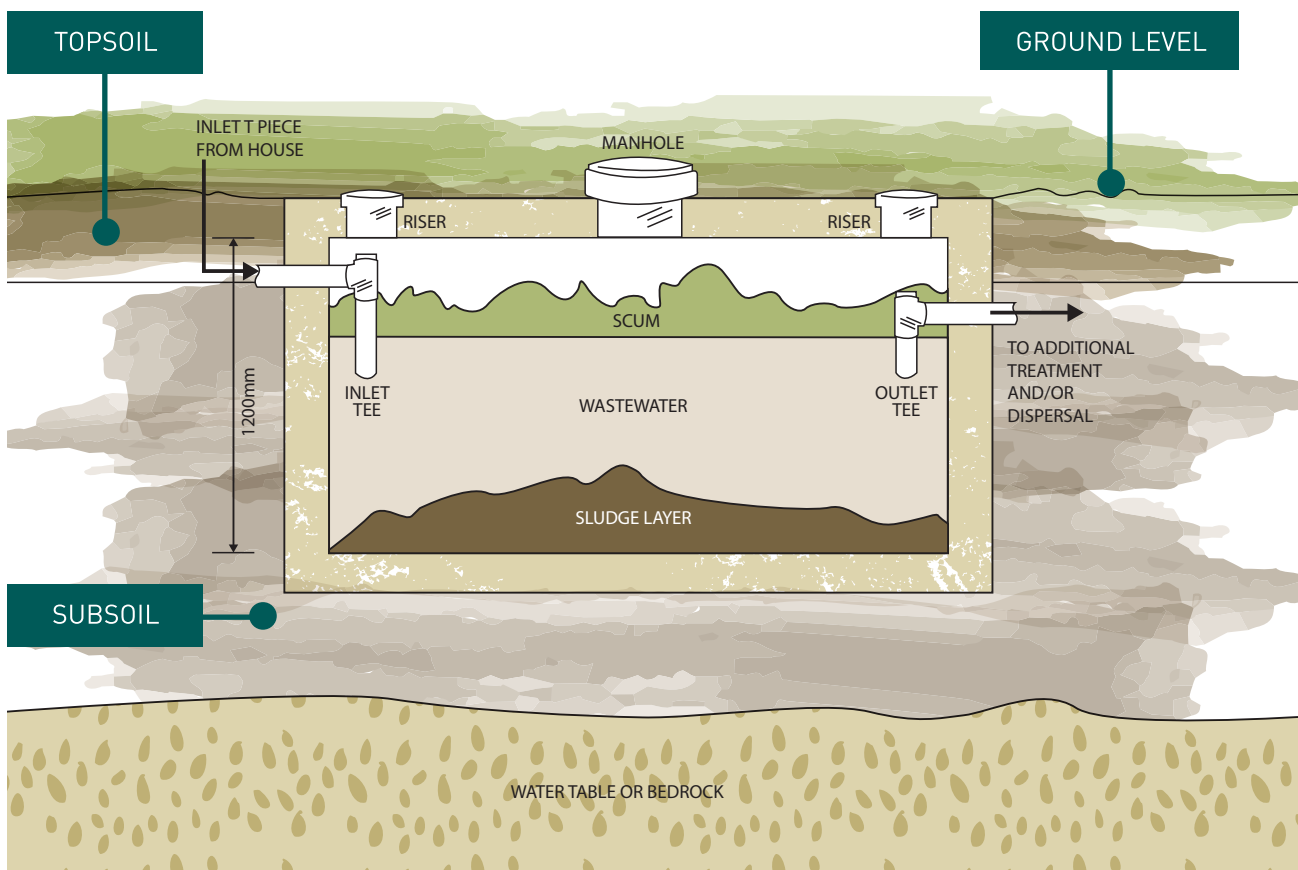
The conventional septic tank is not a mechanical system and relies on gravity and good bugs to work,

so this system when functioning well is generally inexpensive to operate.

It is very important to remember that septic tanks do not kill the bad bugs (bacteria, viruses or parasites) and the effluent must be treated with extreme caution. Contact with people, food, clothing and pets **MUST** be prevented.

If you have a very old septic tank it is unlikely to have a baffle which divides the tank into 2 chambers and helps to regulate the decomposition of sludge within the tank (refer to Diagram 1). You might find that the older tanks tend to require more maintenance because of this. You may be able to retro-fit a baffle depending on the construction of your tank or it might be an advantage to replace this tank with a modern one with all the contemporary features including a dividing baffle. Speak to your local Environmental Health Practitioner and they can assist with further information.

DIAGRAM 1: SINGLE COMPARTMENT SEPTIC TANK (WITHOUT A CENTRAL BAFFLE)



Below are examples of common older trench design along with two absorption field layouts that would no longer meet requirements,

DIAGRAM 2: TYPICAL ABSORPTION TRENCH

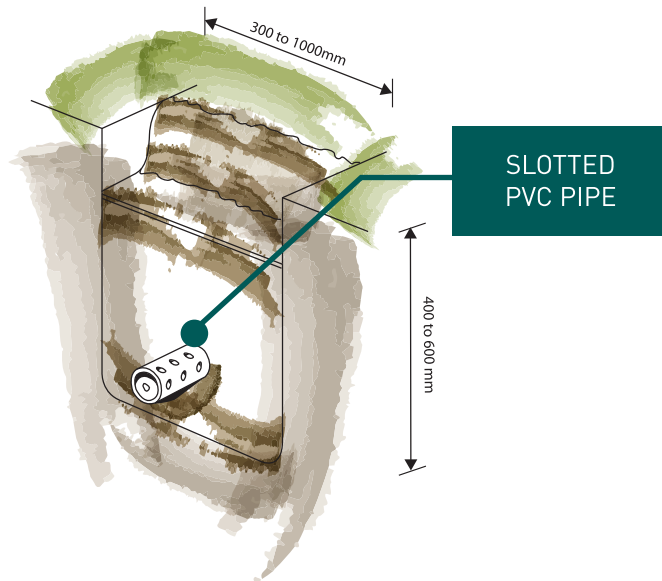
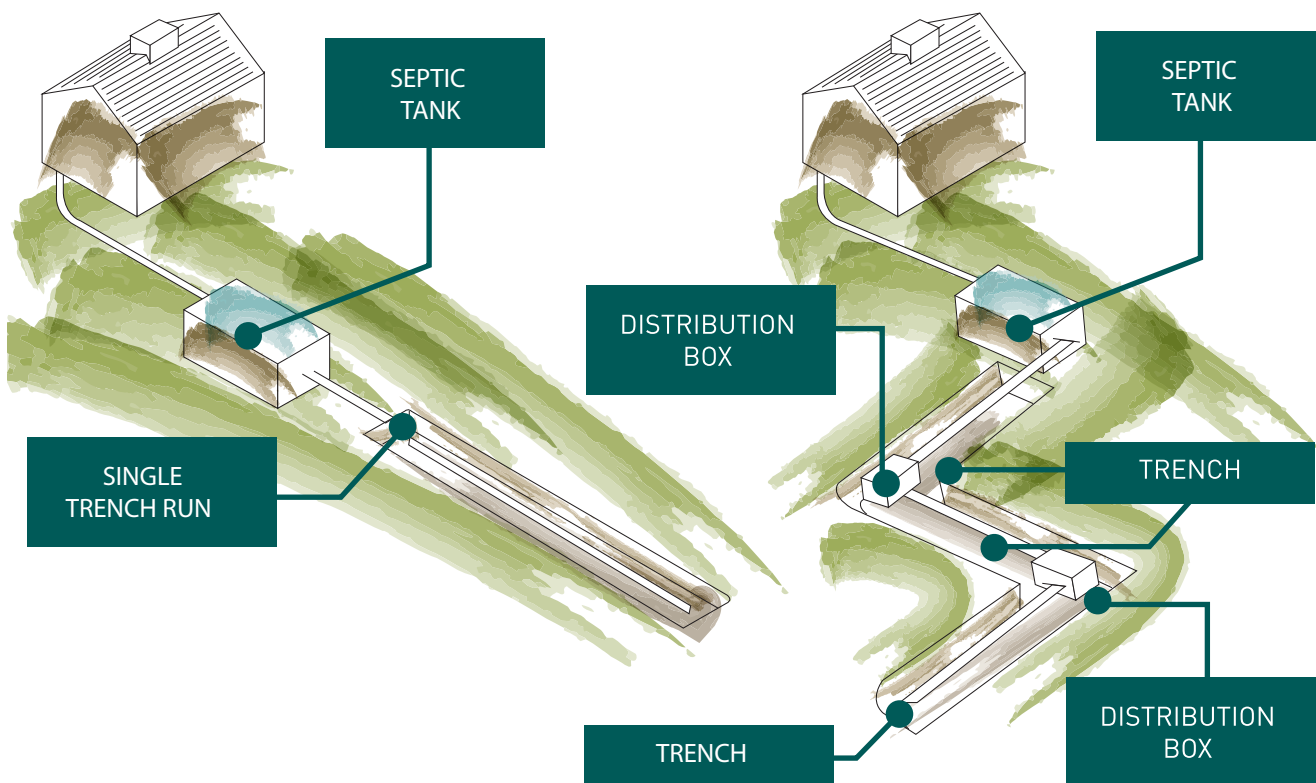


DIAGRAM 3: TYPICAL HISTORICAL TRENCH LAYOUT



7.2 ISSUES ASSOCIATED WITH IN-SITU SEPTIC TANKS AND ABSORPTION TRENCHES

- Too much sludge. This can result in untreated wastewater heavy with solids leaving the tank and clogging up pipes and absorption trenches.

Ensure the tank is desludged regularly, and never allow sludge to be less than 100mm from the base of the inlet pipe.

- Too much water going into the septic tank and trenches. This can also result in solids being pushed out of the tank and clogging up the pipes and the trenches because of poor wastewater flow rate calculations or overuse of the system. This commonly occurs when the system is undersized to manage household wastes, or the system is over used.
- Toxic chemicals such as bleach or commercial cleaners going into the system. This can result in the good bugs being killed off and this will stop the digestion process.
- Common signs of a failing septic tank system include water draining away too slowly; pipes making noises or gurgling when draining; sewage smells; or water ponding in the area of the absorption trenches.
- Also, if you have a single trench run you might find that the wastewater is not distributed adequately. This can result in muddy and smelly patches in your yard.

7.3 DEALING WITH THESE PROBLEMS:

You need to de-sludge your double chambered septic tank every 3-5 years depending on use but if you have a single chamber septic tank it may be necessary to do this more regularly. Newly pumped out tanks should be refilled with clean water and a hand full of lime added to reduce the odours and encourage helpful bugs. The following are some other helpful hints to keep your septic tank healthy:

- Ensure the septic tank is inspected frequently by licensed plumbing practitioners to check the scum and sludge levels, and the presence of blockages in the outlet and inlet pipes;
- Keep a record of pump outs, inspections and other maintenance activities;
- Check the household products that you use are suitable for disposal through a septic tank - bleaches, disinfectants or nappy soakers can all affect the operation of the septic tank;
- Use biodegradable liquid detergents, i.e. concentrates with low phosphorus and salt;
- Ensure that the septic tank is mosquito proofed;
- Do not put rubbish such as sanitary napkins, condoms or disposable nappies down the toilet;
- Do not alter any part of your system without Council approval. Your septic tank system has been designed for a particular amount of wastewater. Be careful not to overload the system by increasing wastewater flow rates;
- Spread your laundry cycles throughout the week to reduce the disruption of the settling process inside the septic tank.

7.4 LOOK AFTER YOUR ABSORPTION TRENCHES BY:

- Diverting stormwater away from the absorption trench;
- Plant small water loving, shallow rooted plants down-slope of the trenches. These will help absorb the effluent;
- Do not drive over or allow livestock to disturb the trenches;
- Do not build structures like garages or sheds over the trenches;
- Do not cover them with concrete or pavers;
- Do not place excessive amounts of top soil on top of trenches. If the trenches are soggy then you should call a licensed plumbing practitioner;
- Do not let children play near the absorption trench area.

7.5 WHAT IS THE DIFFERENCE BETWEEN AN OLD AND NEW SEPTIC SYSTEM?

Technological advancements provide us the opportunity to manage our wastewater in safer and more effective ways. In-situ tanks have become an historical method for managing wastewater and lack some of the components that are integrated into modern septic tank designs.

These more modern components include:

- Baffle – a wall-like structure that acts to reduce the flow of solids through the tank and into the disposal system.
- Outlet Filter – A strainer that further acts to reduce suspended solids entering the disposal system.
- Inspection ports – To allow for simple inspection of the interior of the septic tank system.
- Established Operating Capacities – Modern septic tank systems are now factory made and have specifications for the wastewater flows they can manage.

With this evolution of technology, standards and requirements also change, meaning that your historic septic tank system may not meet all of the current requirements for septic tanks. However,

existing septic tank systems are still permitted to be used until one or more of the following arise:

- Your system fails and requires repair or replacement;
- The risk of environmental degradation or health impacts becomes too great;
- A reticulated sewer becomes available in your area;
- You alter your house design or any plumbing fixtures attached to your septic tank system;
- Your septic tank no longer meets the water quality standards it is required to achieve ; or
- You have been given an order by local government or other relevant wastewater or environmental protection agency to upgrade the wastewater management system.

Should your existing septic tank no longer be a viable option, it will need to be replaced with a disposal system that is currently approved for installation in Victoria. Therefore, it is in your interest to maintain your wastewater management system to the highest standard possible in order to protect the natural environment, your community, your family's health and your hip-pocket.

7.6 WHO TO CONTACT:

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