



TOWARDS BETTER ONSITE WASTEWATER MANAGEMENT IN VICTORIA - COMMUNITY EDUCATION SERIES

FACT SHEET 3: SEPTIC TANK WITH SAND FILTER

This information will be of interest if you live on a property that is not connected to a town sewerage system and you manage your own waste water. This fact sheet focuses only on sand filters, their issues and some ideas to help manage them. To gain an understanding of the entire septic system, it is recommended that this fact sheet be read in conjunction with Fact Sheet 1: Conventional Septic Tanks (Basic Design Information) and Fact Sheet 6 Common Disposal Methods (Primary Treatment).



3.1 WHAT IS A SAND FILTER?

Sand filters are a form of secondary treatment and are most commonly installed in conjunction with conventional septic tanks (for details on conventional septic tanks refer to Fact Sheet 1: Conventional Septic Tanks: Basic Design Information). Sand filters are a box shape construction dug into the ground that is lined and filled with sand.

The effluent from the septic tank is dose loaded into a gravel filled bed on top of the sand material. The irrigated effluent trickles through the sand via gravity with the sand capturing any remaining solid material while providing a suitable environment for aerobic bacteria (good bugs) to treat the waste water to a secondary standard.

At the bottom of the box is another gravel drain system which directs the treated effluent to a pump well for dispersion within the property boundary.

The main benefit of having a sand filter in your domestic wastewater treatment system is to treat the effluent coming out of the septic tank to a higher standard which will reduce negative impacts on the environment, and assist with site constraints (e.g. you are on a small block or dealing with environmental sensitivity).

3.2 WHAT ARE THE COMMON ISSUES WITH SAND FILTERS

It is important to get the sand material just right. Sand that is too large will allow the wastewater to pass through the filter too fast, limiting treatment time. Sand that is too fine or contains too much clay will decrease the speed of water moving through the filter and may result in clogging.

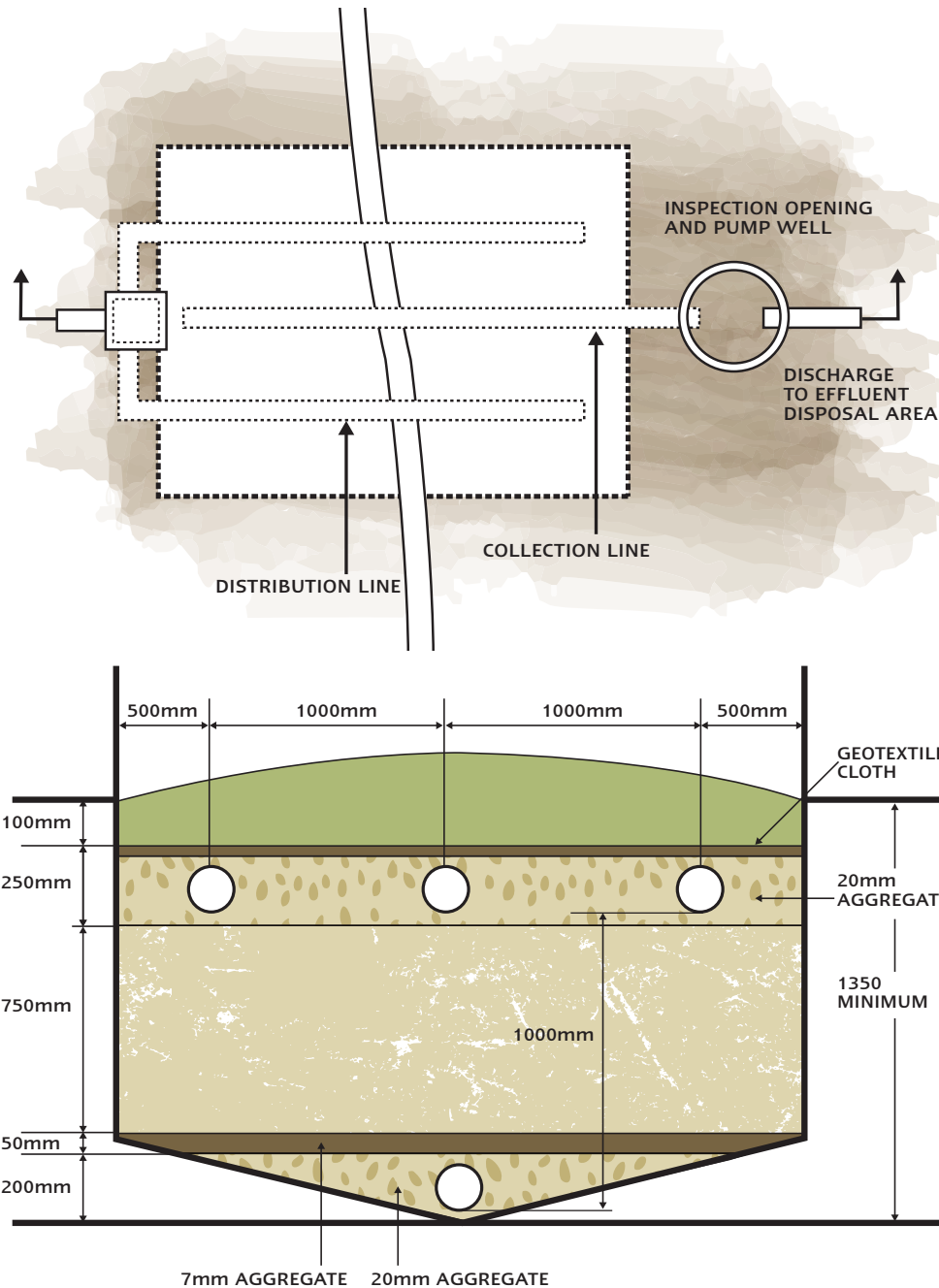
The sand material can also become clogged by too much solid material coming from the septic tank, reducing effectiveness and increasing the likelihood of failure.

Sand filters can be affected by high rates of wastewater being applied in one day. These

filters become less effective at removing bad bugs and other wastes from the wastewater at high loading rates.

Uncontrolled dosing and uneven distribution of wastewater across the filter surface can result in parts of the filter becoming overloaded resulting in wastewater being flushed through the filter without adequate treatment. For effective operation, the wastewater needs to be carefully dosed and evenly distributed across the surface of the sand filter.

DIAGRAM 1: A BASIC SYSTEM



3.3 A FEW SIMPLE STEPS TO A HEALTHY SAND FILTER:

- De-sludge your septic tank every 3-5 years depending on use. Sludge from the septic tank forms a crust on the surface of the sand filter and blocks the wastewater from moving through the filter. Consequently you may be required to periodically replace the sand in the sand filter material;
- It is a requirement to have the treated effluent coming your sand filter tested with a copy of the test results sent to your local government;
- If the effluent is discharged below the ground surface then it needs to be tested for biochemical oxygen demand and suspended solids annually.
- Install water saving devices to limit the flow of wastewater through the system;

- Inspect the sand filter and disposal area for odours, wet spots or surfacing sewage. If you notice any of these you will need to call a licensed plumbing practitioner;
- Pump failure or water ponding on the surface of the sand filter can be serious problems.
- If you have an older sand filter you might consider upgrading it to include a pressurised distribution system. This system will allow more even distribution of the wastewater across the surface area of the sand filter and helps it to work more effectively;
- Do not build structures like garages or sheds over the septic system or sand filter;
- Do not cover the sand filter with concrete or fixed pavers;
- Divert stormwater away from the system; and
- Keep traffic and livestock off the system.

3.5 HISTORIC SAND FILTER SYSTEMS.

If you have an ageing sand filter incorporated into your domestic wastewater system and a small allotment, it is likely that this system was designed to discharge the treated effluent to the street kerb or other offsite location. This is an out dated method of designing wastewater systems that was frequently used to manage wastewater generated from houses on small allotments.

This method of discharge is no longer permitted due to the risks to the environment and human health. However there is no need to panic just yet. If you have a system designed to discharge offsite it is unlikely that you will be required to change it unless one or more of the following circumstances arise:

- Your system fails and requires repair or replacement;

- The risk of environmental degradation or health impacts becomes too great;
- You alter your house design or any plumbing fixtures attached to the system;
- Your sand filter no longer meets the water quality standards it is required to meet;
- You have been given a formal written direction by your local government or other relevant wastewater or environmental protection agency to the upgrade the system.

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.

3.6 WHO TO CONTACT:



**Baw Baw
Shire Council**

PRODUCED AND FUNDED BY:



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