

## 31. ECO-INFO -- SEPTIC ✓ SAFE PROTECT YOUR HEALTH AND ENVIRONMENT YOUR SEPTIC PUMP-OUT SYSTEM *with* SELF ASSESSMENT TROUBLE SHOOTING GUIDE

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Wyong Shire Council has many non seweraged areas that are serviced by on-site septic systems. These areas include Jilliby, Glenning Valley, Tumbi Umbi, Doyalson, Dooralong and Yarramalong etc. To ensure the minimal impact to public health and the environment in which we live, it is essential to understand the operation and maintenance requirements of your septic pump-out system

### WHAT IS A SEPTIC SYSTEM?

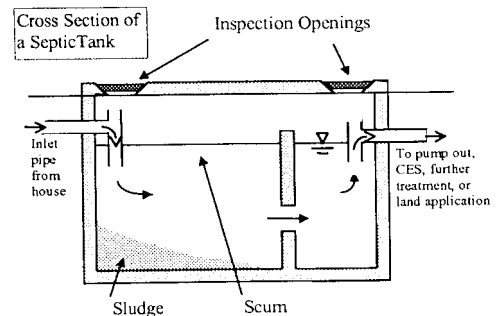
A Septic Pump-Out System has a watertight tank combined with a collection well and suction line. Council's approved waste contractor regularly removes effluent from the collection well on either a weekly or fortnightly basis.

### HOW DOES A SEPTIC TANK WORK?

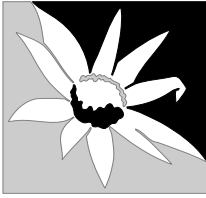
All wastewater enters the tank. Most solids settle to the bottom and are retained in the tank forming a sludge layer. Fats and greases lighter than water rise to the top to form a scum layer. A baffle holds the scum layer and prevents it from leaving the tank.

Bacteria in the septic tank break down the solid matter in the sludge and scum layers. Material that cannot be fully broken down gradually builds up in the bottom of the tank and must be pumped out periodically.

Primary treated effluent from the tank flows to a large collection well that is regularly pumped-out only by Council's approved waste contractor.



**Figure 1: cross section of a septic tank**



## **TROUBLE SHOOTING GUIDE**

### **SEPTIC PUMP-OUT SYSTEMS**

***A self assessment trouble shooting guide to assist you in maintaining your septic pump-out system.***

Septic pump-out systems in the Wyong Shire consist of a tank (usually constructed of concrete or polypropylene) where primary treatment occurs, a collection well where effluent is stored and a suction line terminating at the front boundary.

Problems with system failure (offensive odours and leaking tanks) usually occur because -

- There has been little or no maintenance on the tank and system.
- The tank has not been desludged to remove accumulated build up of sludge and solids in the bottom of tanks. Sludge build up reduces treatment and the effluent holding capacity of tanks.
- The collection well is undersized or there is an excessive use of water in the household causing effluent to overflow.

To overcome these problems this self assessment guide is designed to assist you understand how your system works and to undertake an assessment of your own system's performance. Actions are outlined to assist you rectify any identified problems.

The guide starts with an assessment of the condition of the tanks and suction line. When checking tanks be aware that effluent can be a health hazard. Use appropriate personal protective equipment and safe work practices.

Should you require any assistance or further information please contact Council's Customer Service Officers on (02) 4350 5555.

## Septic Pump-out System Trouble Shooting Guide

### The Septic Tank and Collection Well

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**Checks**

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**Actions**

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**Locate your tank on your property**

*The tank is usually downslope of the dwelling or buildings with plumbing fixtures in them. Council may be able to assist you locate your tank by researching your records if available.*

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**Are the lids and manhole covers accessible?**

*The lid and manhole covers need to be accessible at ground level. All soil, plants and any overburden needs to be removed.*

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**Are the lids above ground level?**

*The lid of the septic tank ideally needs to be 150 mm above ground level to prevent entry of surface water. The surrounding ground level needs to be graded to fall away from the tank. The entry of surface water will only increase the need to have the tank pumped out more frequently than is required.*

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**Are the lids sealed to prevent odours and the entry of rain water and insects like mosquitoes?**

*Any cracks or openings in the lid of the tank need to be sealed. The join between the lid and the side of the tank needs to be sealed with a 4:1 sand/cement mix to prevent grasses and plant roots entering the tank and cause clogging. Before sealing lift the manhole cover to and ensure that any tree roots that may have entered the tank are removed. Some older tanks have projecting vents above the tank that often are damaged. These vents can be repaired and restored. Missing or broken inspection covers need to be replaced and sealed. Contact your plumbing or septic supplier for covers.*

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**Are the tanks of sound construction and holding effluent without leaking?**

*Some older systems were constructed of brick or blocks and may be leaking. Check the surrounds of the tank and look for visible signs of a leaking tank where above ground level. Lift the manhole cover and note the level of liquid/scum layer on the surface. Partly filled systems could be leaking and can cause groundwater and surface water pollution. Call your local plumber or Council for assistance and advice.*

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### The Septic Tank Ctd

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**Checks**

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**Actions**

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**Check the sludge, scum and effluent levels.**

*Lift the manhole lid to check sludge and scum levels. This will improve the performance of the tank and effluent storage capacity. Check for -*

- High effluent levels over the inlet junctions will indicate a clogged outflow.*
- Sludge needs to be removed if sludge on the bottom of tanks is greater than about 400 mm thick or within 200 mm of the bottom of the outlet of the tank. To check your sludge levels*

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insert a 20-25 mm marked rod, or a long stick with wrapped towelling attached, slowly through the top scum layer. As it descends you should then feel it pass through a liquid effluent layer until a soft ooze is reached. Note the level of the marked rod and continue to push all the way to the bottom of the tank. Remove the rod or stick and check the height of the sludge against the markings or towelling.

- Scum is to be removed where build up is within 100 mm of the bottom of the outlet of the tank or overflowing over the top of the outlet junction. Scum levels can be assessed, in a similar way to sludge levels, near to the outlet junction.

Excessive sludge and scum can only be removed by Council's approved waste contractor. Recent studies suggest sludge and scum should be removed every 3-5 years for the average 4 person 2300 litre sized tank.

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### The Septic Tank Ctd

#### Checks

#### Actions

**Are the inlet and outlet junctions present/functioning inside the tank?**

Remove the small inspection covers at the edge of the tanks. Check the junctions are intact as they are required to prevent surface scouring within the tank and to prevent carry over of solids (fats, scum, oils, soap waste, etc.) to the collection well. Any broken junctions need to be repaired and replaced. Call your local plumber for assistance.

**Are all house drainage lines connected to the tank?**

Open the inspection inlet opening on the tank and have someone flush the toilet while you view the inlet of the tank. Water should be seen to flow in the tank at the inlet junction. The same can be done systematically for other fixtures (basin, shower, etc). All fixtures need to be connected to the tank. In some cases it may be necessary to dye test drainage lines and tanks to verify connections. Any dye testing needs to be carefully undertaken in view of the proximity to waterways and the environment.

**Is the installation fitted with an overflow relief gully?**

The gully (looks like a drainage grate at ground level) is installed externally on house drainage lines with an overflow level @ 150 mm below the floor level designed to ensure that if there are any blockages in the house drainage lines that they overflow outside the building. The top of the gully has to be above ground level @ 150 mm. Call your local plumber for assistance.

**Is there a house drainage vent installed?**

An upstream vent is always installed on house drainage before the last fixture (toilet, basin, sink etc.) and appears as a pipe above the roof line of the dwelling. This vent prevents siphoning of trap seals in fixtures and prevents the build up of

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*dangerous gases such methane in the drainage system. Call your local plumber for assistance*

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### **Grease Trap (if fitted)**

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#### **Checks**

**Systems that were installed prior to 1984 generally had grease traps fitted as the septic tanks did not have internal baffles. Septic tanks were then fitted with internal baffles and grease traps were no longer required. Grease traps collect waste from the kitchen sink and are usually found near to the kitchen. They require periodic cleaning (@ 3 months)**

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#### **Actions**

*The lid of the grease trap (@ 600 mm x 400 mm) needs to be lifted and checked for cleaning.*

*All fats and solids need to be removed.*

*Grease trap contractors can remove contents if required.*

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### **The Suction Line**

Walk towards the area where you believe the suction line is located. The suction line (50 mm in size) runs from the bottom of the collection well underground to the front boundary. It terminates as a small riser at the boundary.

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#### **Checks**

**Are there any signs of effluent leaking around the suction line?**

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#### **Actions**

*Look for wet patches on the ground where the suction line is believed to run. Check to ensure the suction line has a cap or locking device at the boundary.*

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## **SUMMARY**

### **WARNING SIGNS**

By looking out for the following warning signs and attending to them immediately, you can protect your health and the environment.

- \* Water that drains too slowly.
- \* Drain pipes that gurgle or make noises when air bubbles are forced back through the system.
- \* Sewage smells, this indicates a serious problem.
- \* Water backing up into your sink which may indicate that your septic system is blocked.

#### **IF THERE ARE ODOURS PRESENT CHECK:**

- > Check the greasetrap (if installed), is it full or blocked?
- > That the lids on the tank are sealed.
- > That the system is not overflowing.

#### **DO**

- ✓ Have your septic tank desludged regularly. This should occur at no more than three to five yearly intervals for the average sized family to prevent sludge build up, which may reduce the liquid storage capacity of the tanks.
- ✓ Have your septic tank serviced regularly by service providers to check scum and sludge levels, and the presence of blockages in the outlet and inlet pipes.
- ✓ Have your grease trap (if installed) cleaned out at least every two months.
- ✓ Keep a record of pump outs, inspections and other maintenance.
- ✓ Learn the location and layout of your septic system.
- ✓ Check household products for suitability for use with a septic tank.
- ✓ Use biodegradable liquid detergents.
- ✓ Conserve water and use a sink strainer.
- ✓ Ensure your tanks are mosquito-proofed.

#### **DON'T**

- x Put large quantities of bleaches, disinfectants, whiteners, nappy soakers and spot removers into your septic tank via the sink, washing machine or toilet.
- x Allow any foreign materials such as nappies, sanitary napkins, condoms and other hygiene products to enter the system.
- x Use more than the recommended amounts of detergents.
- x Put fats and oils down the drain and keep food waste out of your system.
- x Install or use a garbage grinder or spa bath if your system is not designed for it.

#### **REDUCING WATER USAGE**

Reducing water usage will lessen the likelihood of problems such as overloading with your septic pump-out system. Overloading may result in wastewater backing up into your house, contamination of your yard from overflowing collection wells with improperly treated effluent, and effluent from your system contaminating groundwater or a nearby waterway.

#### **Some Water Usage Facts**

**SHOWERS** use 10-30 litres a minute, 200 litres a minute in 10 minutes. Try a AAA shower head.

**BATHS** use an average of 120 litres.

**TOILETS** can use up to 11 litres per flush. Dual flush cisterns typically use only 3/6 litres per flush.

**WASHING MACHINES** use 100 -200 litres per load. Front loaders use less. Fully load before use.

**LEAKING TAPS** can use up to 5 litres an hour. Repair leaks and replace washers.

**DISHWASHERS** use approximately 50 litres per cycle. Fully load before use.

A poorly maintained septic pump-out system can be a serious source of water pollution and may present health risks, cause odours, and attract vermin and insects. By looking after your septic system you can do your part in helping to protect the environment and the health of you and your family.

**This information package has been assisted by the New South Government through the 'Septic ✓ Safe' On-site Sewage Management Program administered by the Department of Local Government.**

For further assistance please call Council's Customer Service Centre on (02) 4350 5555