

TOWARDS BETTER ONSITE WASTEWATER MANAGEMENT IN VICTORIA - COMMUNITY EDUCATION SERIES

FACT SHEET 5: GREYWATER SYSTEMS IN NON-SEWERED AREAS

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 using a spilt system (separate grey and black water systems) or are interested in reusing some of your wastewater generated from your property.

5.1 WHAT IS GREYWATER?

Greywater is domestic wastewater that excludes toilet wastes and may include hand basin, bath, shower, laundry or kitchen discharges. Although greywater does not generally contain faecal contaminants or urine, it can still impact on health and the environment.

Kitchen wastes contain lots of fats, oils and grease and consequently should not be diverted into greywater systems as these compounds can affect plants, harm the good bugs and clog up drainage lines.

Greywater may contain high amounts of dissolved trace chemicals such as nitrogen, phosphates and sodium which can provide food for bad bugs and plants and deposit physical pollutants such as dirt, lint and sand back into the environment and can damage plants and soil structures.

You need to be particularly careful of wastewater produced from washing nappies and soiled clothing as it will contain faecal material making it actually black water.

5.2 WHAT IS BLACK WATER?

Domestic wastewater grossly contaminated by faeces and urine is called black water and includes wastewater from a toilet, urinal, or bidet. Historically in non-sewered areas where a greywater system has been installed, the black water component is managed by a septic tank system. For more information on these old septic tank systems refer to Fact Sheet 4: Historic Septic Tank Systems.

5.3 GREYWATER DIVERSION SYSTEMS

Domestic wastewater is generally diverted from septic systems in one of 4 ways:

- 1| by fitting a hose to laundry / bathroom outlets and running that water to plants and the lawn;
- 2| by diverting the household greywater to a collection well where it is gravity fed or pumped to a trench. These systems were commonly used for managing greywater where the greywater and black water were split (called 'spilt systems'); and
- 3| by diverting the household greywater to an Environment Protection Authority (EPA) approved greywater treatment system and then reused in the house or directed to an irrigation system. For more information on approved greywater treatment systems go to <http://www.epa.vic.gov.au/your-environment/water/onsite-wastewater/greywater-treatment-systems>.
- 4| by diverting the household greywater to a street gutter or water-course; Currently, for the permanent diversion of greywater only an EPA approved greywater treatment system can officially be utilised to manage domestic greywater in Victoria. The installation of these systems requires local government approval so contact your local environmental health officer to discuss your options.

These EPA approved greywater treatment systems have the following steps in the treatment process:

- Collection chamber to manage the flow of effluent through the system,
- Aeration and filtration processes to treat the wastewater,
- UV Disinfection or Chlorination Systems or disinfect the treated wastewater,
- Holding chamber for treated wastewater, and
- Overflow from treatment system into a small trench.

5.4 THE DON'TS OF DISPOSING GREYWATER

Due to the problems presented by greywater, there are particular requirements for its disposal. Below is a list of prohibited uses and disposal methods for greywater.

Greywater:

- Must not be stored for longer than 24 hours without adequate treatment by an EPA approved greywater treatment system;
- Must not be used for toilet flushing or any internal household use without being adequately treated by an EPA approved greywater treatment system;
- Must not be used to water fruit, vegetable and plants that will be eaten raw or where fruit has fallen and could be eaten;
- Must not be discharged to the surface of the ground or be used to wash down paths, driveways or cars;
- Must not be used to top up rainwater tanks or swimming pools;
- Must not be discharged beyond the boundary of your allotment (refer to the next section 5.5 of this Fact Sheet);
- Must not be diverted into the septic tank system if the system has been designed to only take black (toilet) water from the house. If grey water is introduced it will overload the system (particularly the trench). If this happens it will cost you a significant amount of time and money to repair. Similarly black water must not be diverted through any part of grey water treatment system.

5.5 OUTDOOR USE OF TREATED GREYWATER

If you have an EPA approved greywater treatment system you can use the treated water in your yard provided you:

- Display prohibition and safety signs and or words indicating “Recycled Water – Do Not Drink”;
- Ensure the treated effluent is contained within the property boundary and doesn't come into contact with the edible parts of herbs, fruit or vegetables;
- Monitor your yard for any signs of pooling, odours or increased noise from the greywater treatment system and contact your service agent when these occur (this monitoring could include soil moisture sensors and rain sensors – ask your service agent about these);
- When using an irrigation system to disperse your treated effluent, your system will need to:
 - be constructed of purple drainage pipe;
 - have a filter installed between the greywater treatment system and the irrigation system;
- have a flush valve to allow flushing of the irrigation system;
- have a vacuum breaker installed to stop soil and other particles being sucked into (sub surface systems only) the system;
- have fail safe diversion valves to an approved disposal area;
- apply the treated effluent at a rate and volume that does not exceed soil or plant tolerances; and – be surrounded by good quality soil to support good plant and good bug growth.

- When using recycled water hose tap outlets and hoses you need to ensure that:
 - the outlets and hoses are purple;
 - the outlets are located at least 300mm from any drinking water tap;
 - have a non-standard left-hand connecting thread; and
 - have a child proof handle.
- have a system that meets the necessary water quality standards

5.6 KEEPING WASTEWATER ON YOUR PROPERTY

If you have an older split system on a small block then it is likely that your system was designed to discharge greywater to the street kerb or another 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 for new installations due to the risks to the environment and human health. 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,
- sewerage becomes available, – your sand filter (if installed), no longer meets water quality standards it is required to meet, or
- you are given a formal written direction by your local government or other relevant wastewater or environmental protection agency to 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.

5.7 SIMPLE STEPS TO A HEALTHY FAMILY, ENVIRONMENT AND WALLET:

Reusing greywater on your property can help you to conserve valuable drinking water. The following steps will help reduce human health and environmental issues in using greywater:

- Only choose an EPA approved greywater treatment system, for the permanent diversion of greywater
- Ensure that regular maintenance is undertaken on the greywater treatment system which should include cleaning the filters, testing pumps, removing sludge build up, and ensuring the disinfection process is working properly, – Ensure that all the drainage pipes are marked or labelled to indicate greywater use,
- Select garden friendly detergents and washing soap that is biodegradable and low in salts (it may be useful to irrigate occasionally with tank or other water to disperse any salt build up),
- Consider enriching the soil by adding compost when irrigating with greywater, especially if located on sand or shallow rock soils,
- Consider applying a soil rewetting agent every six months,
- Monitor plant and soil responses to being watered by the treated wastewater.

5.8 WHO TO CONTACT:

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