

SEWERAGE

Return waste water to a usable state

First prize in any domestic waste water treatment system must be to return the water to, if not a drinkable then at least a non-pollutant state, and this is possible with proprietary multi-chamber installations that combine aerobic and anaerobic microbiology with aeration and other techniques.

For, make no mistake, while a septic tank system is a great improvement on more basic sewage management

techniques such as long-drop toilets, all a traditional septic system achieves is the removal and digestion by

microbes of solids. The resultant fluid, free of solids though it may be, remains

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EWT to assess bullfrog sites

Do you know of patches of land where bullfrogs lurk? And especially areas that are threatened by development?

A national assessment of bullfrogs is planned for the near future and the urban conservation project co-ordinator of the Endangered Wildlife Trust has been asked to compile a list of known bullfrog sites currently under threat from development, including the area, date, proposed development,

environmental impact assessment recommendations and progress to date etc. The EWT hopes that this assessment will ultimately lead to stricter EIA conditions. If you know of such sites contact Emily Taylor of the EWT, tel 011 372-3600 Ext 63 cell 084 555-1266 or Email emilyt@ewt.org.za

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NEMBA

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It should be returned to Sagic's Margie Vonk (email on form), who will issue an invoice. No admittance to the training will be allowed without EFT pre-payment.

To download the form, go to <http://www.invasives.org.za/resources/downloadable-resources/finish/111-invasive-species-training/1085-invasive-species-certification-training-course.html>

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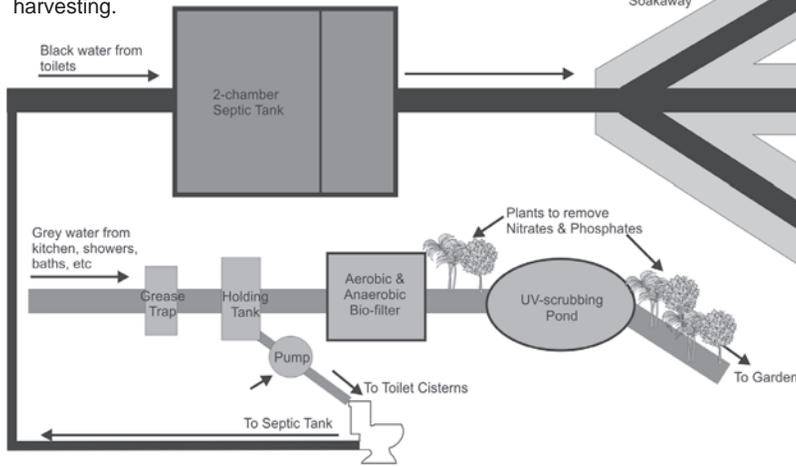
SEWERAGE

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toxic, full of pathogens and capable of contaminating any water source it comes into contact with. It is in fact the soil through which it passes out of the soakaway that renders it harmless.

But for many smallholdings, and certainly for those that have existing traditional septic tank/soakaway systems such

Dual-pipe sewage system incorporating conventional 2-chamber septic tank and grey-water utilisation and harvesting.

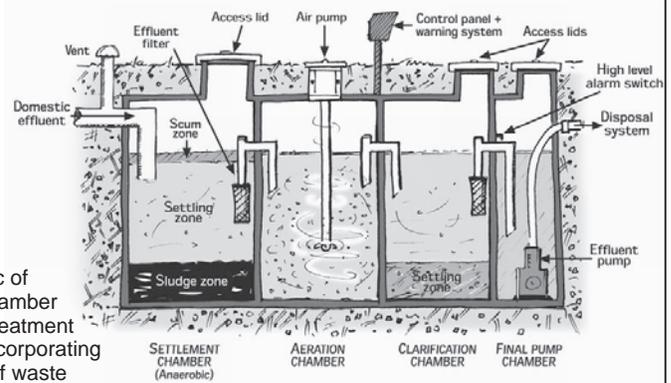


an installation may be beyond the budget.

What, then, can one do to, firstly, minimise one's water usage and, secondly, re-use as much as one can of one's waste in a safe and sustainable way?

One needs to start by separating the household grey water (bath, shower and kitchen waste)

Schematic of a multi-chamber sewage treatment system incorporating aeration of waste



from the black (toilet) water so that only the latter flows

into the septic system. Apart from providing one with many hundreds of

litres of eminently re-usable, or easily treatable, water, a major benefit will be

that it will mean much longer intervals between septic tank pumpings ~ a particular benefit in households where the septic system is, for whatever reason, on the small side.

What can one use grey water for? For a start, one can use it to flush toilets, thus saving eight to ten litres of clean drinking water with each flush.

Secondly, after a simple filtering process one can use it as fertilizer-rich irrigation water in the garden, because the dissolved soaps and

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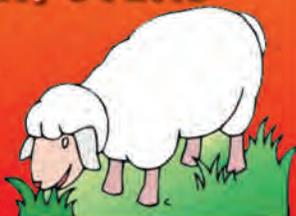
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SEWERAGE

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and detergents in the water are made up largely of phosphates and nitrates which constitute a major part of chemical fertilizers.

Or, thirdly, one can use it to feed a marshy wetland which will attract insects and bird life to one's garden.

One can't, of course, use it as drinking water for livestock, and one can't (legally, at least) discharge it in any way that it will run into an existing watercourse or river.

To make use of grey water requires a bit of ingenious re-plumbing of the house. First, one will need a vessel into which to store the grey water, typically an underground tank fitted with a sump pump.

While shower and bath water can be discharged directly into the holding tank, kitchen waste water should pass through a grease trap first.

To use the grey water in one's toilets will require a booster pump fitted with either a conventional bladder and pressure switch or one of the newer electronic controllers. This should be fitted between the holding tank and the toilet cisterns and the float switch on the sump pump in the

holding tank should be adjusted to ensure that there is always sufficient water in the tank to allow for full toilet cisterns.

The excess water from the holding tank should be pumped out by the sump pump into a simple gravel, sand and anaerobic filter which, while it will not remove the phosphates and nitrates, will remove any remaining fats, oils and greases, and other solids such as hair, skin and small food particles etc that will have escaped collection in the grease trap. For it is these small solids that, as they rot and putrefy, make the water smelly.

If you store the resultant water in a dam or pond it will quickly turn bright green as the phosphates and nitrates it contains provide nutrients for algae to thrive.

This fluid can be used, not so much as irrigation water for the garden, as for liquid fertilizer, bearing in mind its nutrient load and the fact that it will, with repeated use, have an effect on the pH of the soil being treated (because it is alkaline).

However, allowing this water to trickle away slowly through a bed of sand planted with reeds and suitable water-loving plants will result in most of the phosphates and nitrates being removed by the plants, rendering the water that emerges at the end of the filter as clean as, or even cleaner

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