

What is Graywater?

Graywater is untreated wastewater collected from bathtubs, showers, washing machines and bathroom sinks, and reused for outdoor irrigation or toilet flushing.

Dark graywater is water from kitchen sinks and dishwashers that may have a high content of organic matter encouraging bacterial growth.

Black water is toilet wastewater or water that has touched soiled diapers. *Neither dark graywater nor black water is allowed to be re-used in landscape irrigation.*

Collected rainwater is not considered graywater. It is also distinct from reclaimed water, that is, wastewater that has been treated at a treatment plant.



Why Use Graywater?

- To reduce the use of potable water in the landscape for ornamental and some edible plants.
- To reduce the carbon footprint and energy used by water districts and wastewater treatment facilities.
- To use wastewater produced by showers, tubs or washing machines that would otherwise flow into a sewer system.
- A typical household of 2.6 people produces an average of 90 gallons of graywater/day.

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Shades of Graywater

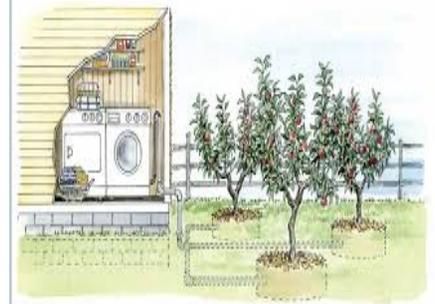


Image: Mother Earth News

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Graywater Limitations

- Graywater is not to be used in spray irrigation or allowed to pond or run off the owner's property.
- Unfiltered graywater may clog drip emitters in a drip system. To avoid clogging systems, discharge graywater into a mulch basin covered by 2" of mulch, rock or soil or with a solid shield to minimize human contact.
- Graywater may be used on ornamental shrubs, fruit trees and edible plants that do not touch the soil. Graywater is **not to be used on root crops.**
- Graywater should not be used on lawns or allowed to touch humans because of a possible health issues.
- Graywater may have excess salinity, chlorine or boron from bath or laundry products and the pH level may be too basic (alkaline) to use on acid-loving plants.
- Use of the following products which are biodegradable, pH-balanced, and sodium, boron and chlorine free, is recommended by **Graywater Action:**
 - Laundry: Oasis, Ecos, Biopac Liquid Detergent, Vaska, Dr. Bronner's Liquid Soap and soap alternatives such as soap nuts made of saponin.
 - Showers and baths: Aubrey Organic shampoos and conditioners.
 - Sinks: Oasis All-purpose cleaner, and Dr. Bronner's cleaners.

Graywater in Marin: Get the facts.

What about permits? Marin Municipal Water District and North Marin Water District do not require permits to install a "laundry to landscape" system or a simple system. The North Marin Water District offers a rebate of \$75 per qualifying fixture or appliance, such as clothes washer, shower, or bathroom sink. Both water districts require a notification form to be filed with the Marin County Environmental Health Services (EHS). Complex systems require a construction permit. EHS Regulations follow:

"Effective August 22, 2011, EHS will oversee residential graywater systems in unincorporated Marin County and some cities. The basis of the program will be the regulations in the California Plumbing Code (CPC), Chapter 16A, Nonpotable Water Reuse Systems. The CPC defines three types of residential graywater systems: clothes washer systems; simple systems; complex systems.

"Clothes washer systems and simple systems are exempt from construction permits. One change from the CPC is

that only a notification will be required for simple graywater systems. A construction permit and plans will be required for complex systems. For systems where plumbing will be altered or back flow prevention valves are needed, a plumbing permit from the Building and Safety Division may be required."

For further information:

- Learn how to install a "laundry to landscape" system, from *Ask this Old House* on the Urban Farmer website: www.urbanfarmerstore.com under Video Library - Drainage - Graywater
- **WaterNow**, a new nonprofit organization, co-founded by Cynthia Koehler, a member of MMWD district board, and Audrey Finci, a management consultant, is focusing on increasing the use of graywater in Marin. www.waternow.org
- **Greywater Action** is a collaborative group of educators, designers, builders, and artists who offer greywater workshops to DIY householders and professional installers. Their website lists trained installers. www.greywateraction.org

Graywater Systems:

- **Laundry to landscape** graywater systems connect a clothes washer to an irrigation line, which discharges the wastewater into the landscape. A person with basic plumbing and irrigation knowledge may install this type of system.
- **Simple graywater systems** collect wastewater from multiple points: clothes washers, tubs, showers, and bathroom sinks. Water is discharged through an irrigation line into the landscape. A **simple system** may be used in one or two-story dwellings, which discharge 250 gallons/day or less.
- **Complex graywater systems** may discharge more than 250 gallons/day and typically include pumps, surge tanks and filtration systems. They may include a **branched drain** or **pumped system**. **Complex systems** require permits according to the California Plumbing Code.