

What is graywater?

Graywater is the used water from baths, showers, wash basins, clothes washing machines and hand wash sinks. Greywater comprises from 50-80% of the water used in a home.

What is blackwater?

In Arizona, blackwater is the wastewater from the toilet and the kitchen sink.

Blackwater is more commonly referred to as “sewage” and has much more suspended and dissolved solids in it than graywater. Black water cannot be discharged onto the ground and has a much greater potential for bacterial, virus and pathogen contamination.

Why use Graywater?

- ☞ To reduce the amount of fresh water utilized to irrigate landscape. In areas with limited water resources the reuse of graywater may allow landscape options that previously were too expensive to be considered. Handled properly, graywater becomes a valuable site resource which otherwise would be wasted.
- ☞ For areas where there is limited moisture, the reuse of graywater can allow plants to flourish.
- ☞ Economic advantages- especially for hauled water sites, reduced use of potable water will save money.

- ☞ Plant growth- graywater contains nitrogen which is beneficial to plants.
- ☞ Regulated areas- for areas under water restrictions, the use of graywater allows for expanded water times and therefore expanded plant selections.
- ☞ Because it feels good to conserve water.

When can I use graywater?

- ◆ When it is contained within property boundaries
- ◆ When it is used for lawn watering and landscape irrigation.
- ◆ When it *does not* contain hazardous or infectious materials
- ◆ When the delivery to plants is by flood or drip irrigation
- ◆ When it is applied to a sufficient area for the graywater to be absorbed quickly. The graywater should not pond or surface.
- ◆ When the amount of greywater being generated is matched to the kind and number of plants being irrigated in order to sustain healthy plant growth.

When not to use graywater

- ☒ When plumbing fixtures are not easily accessible.
- ☒ When residents use cloth diapers or suffer from an infectious disease. Wastewater needs to be directed to the wastewater system for these occurrences.

- ☒ When soil conditions are not suitable for plant growth.
- ☒ When irrigation area is located in an area with seasonal high ground water. There needs to be a minimum of 5 feet of unsaturated soils beneath the landscape areas to prevent groundwater contamination from graywater.
- ☒ During seasonally wet periods and/or cold months. During these times, the graywater needs to be redirected back to the original wastewater system.

Households Uses

When using graywater, it is important to choose products that will be discharged into your greywater wisely. Plant productivity will be directly affected by the products you use in your shower, laundry and sinks. Toxic discharge, such as paints, hair dyes, or harsh cleaners, should never enter the greywater system. These substances can not only kill plants, they can also kill important soil organisms. Laundry soap, hand wash soap and bath products should be researched and only those suitable for graywater use should be selected. You have to be willing to actively work your soils and augment or replace soils when an accumulation of salts occurs from the use of graywater.

Do I need a permit to use graywater?

The State of Arizona has identified 13 conditions in the Reuse Rules. For a private residence, if the owner can answer yes to all of the conditions and the total flow is less than 400 gallons per day, a graywater system can be installed without a permit. This is specific only to the outside portion of the graywater design. When considering a new or revised graywater system for a residence, changes made to an existing structure or plumbing system requires a permit from the Building Division. Contact your Building Division prior to planning a new graywater reuse project.

For homes on an individual wastewater system (septic system) in Coconino County, a wastewater permit already exists. The Coconino County Environmental Quality Program does not require a separate permit for a graywater system at this time. However, because we are recognizing the beneficial reuse of graywater to your home, it is recommended that you update your wastewater permit records to reflect the property as being graywater ready. It is also recommended that an operation and maintenance manual specific to your system design be submitted. The O& M manual is to be passed along to the next property owner to ensure they understand the responsibilities and maintenance needed to successfully apply graywater.

The following items are specific Building Division design requirements for greywater systems:

- A permitted and approved diverter valve and parallel drain, waste, vent piping in a graywater system must be installed. The diverter valve routes graywater back to the wastewater system in periods of wet weather or non-watering months (winter).
- An updated site plan showing the areas targeted for subsurface irrigation must be submitted.

For commercial applications a reuse permit from the Arizona Department of Environmental Quality is required.

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