

## Guide to Washing Machine Greywater Disposal

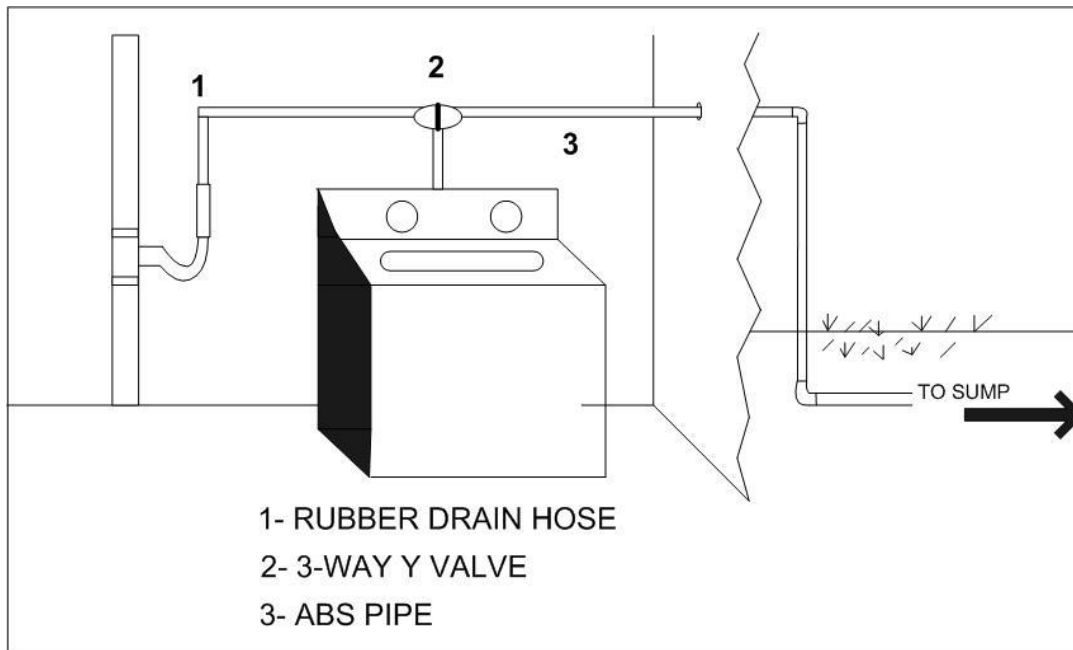
The following guide is provided for developing a simple greywater disposal system to dispose of washing machine effluent only. For more elaborate wastewater systems involving plumbing changes within the house, please see the California Graywater Standards.

### What is greywater?

Greywater is defined as used water (effluent) from clothes washers, bath tubs, showers, and bathroom sinks. Greywater does not include wastewater from kitchen sinks, toilets, or dishwashers. Although greywater does not contain toilet waste, it does contain viruses and bacteria and must be properly disposed underground to prevent health hazards.

**GREYWATER DOES NOT INCLUDE LAUNDRY EFFLUENT FROM SOILED DIAPERS OR EFFLUENT FROM THE WASHING OF CLOTHES OF SICK OR INFECTED PERSONS.**

The washing machine must be equipped with a three-way valve that allows the effluent to be disposed of in the sewer or septic system if either of the above is being washed, see figure below.

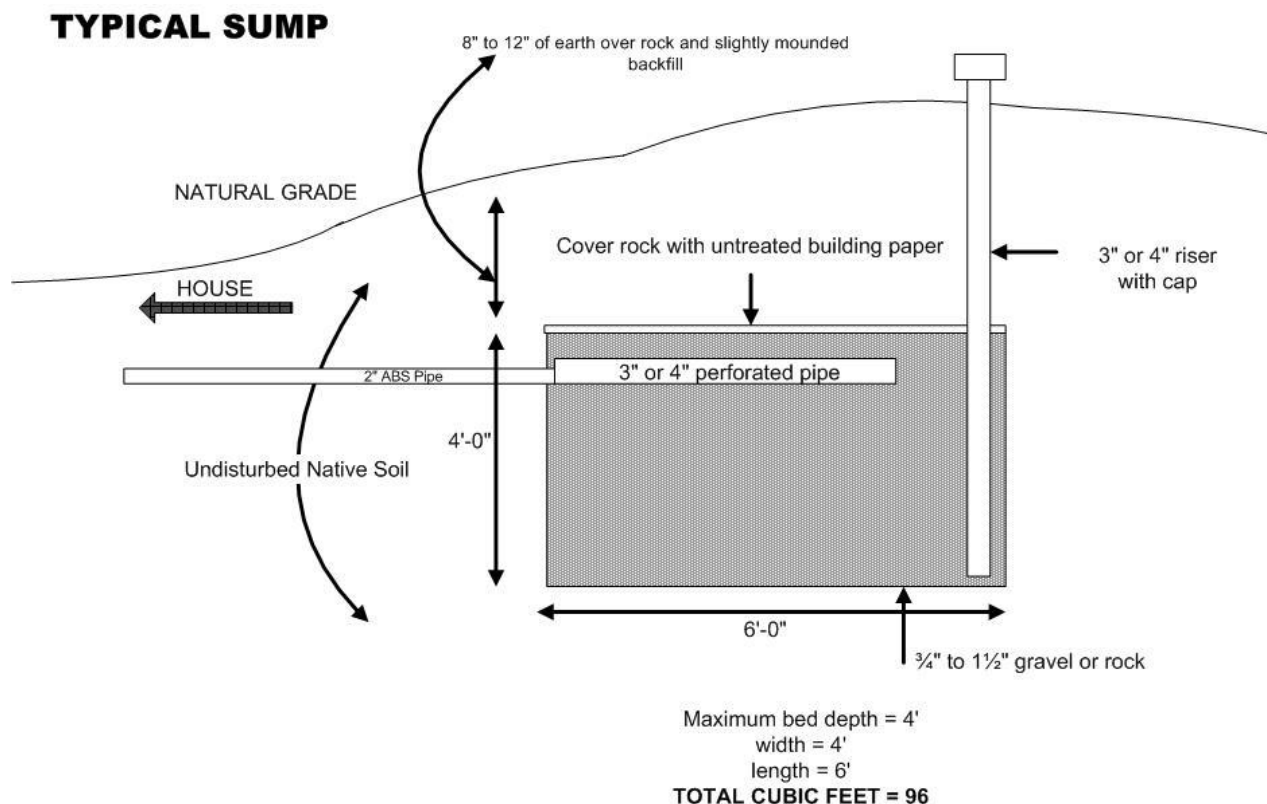


### What is a greywater sump?

A greywater sump is a rock filled trench that collects and disposes of effluent from the washing machine only. A greywater sump can be used to reduce the loading on a septic system, and can help re-use water for landscaping.

## Guide to Washing Machine Greywater Disposal Sumps

The diagram below shows a typical sump sized for two wash loads a day and is the minimum size for a greywater sump, (96 cubic feet) *see figure below*. These dimensions can be altered as needed as long as the total trench depth below the ground surface does not exceed 5 feet. Shallow narrow trenches are preferred, and trenches may be constructed to meander through the landscape.



### Two Steps for constructing a greywater sump

#### *Determine the Location and Size of the Sump*

The size of the sump depends on the amount of effluent and the ability of the soil to absorb water. County wastewater standards requires that a sump have (for washing machine effluent only) a minimum volume of 96 cubic feet. (If washing more than two loads a day in average draining soils, allow one square foot of sump rock for every 1 gallon of effluent.)

Sumps must be located a minimum distance from other features on the property to function properly. These minimum distances are called 'setbacks'. When determining the proper location for the sump, the following minimum setbacks and standards must be met:

- Septic tank: 5 feet
- Septic leach field: 10 feet
- Property line: 5 feet
- Building foundation: 8 feet
- Water lines: 10 feet

## Guide to Washing Machine Greywater Disposal Sumps

- Wells: 100 feet
- Embankments: 25 feet to daylight
- Water courses, streams, creeks, or lakes: 100 feet
- Groundwater: 5 feet
- Minimum cover over sump: 1 foot

### *Install the Sump*

Use caution when digging not to cut into utilities, waterlines, sewer lines, or underground sprinkler lines. If in doubt of utility location please call 811 to have utility lines marked before digging. If you have pets or children, please take every precaution to keep them safe during construction.

### **Greywater and Landscaping**

Sodium, potassium, and calcium are alkaline minerals that are present in laundry detergent. Because of this, greywater tends to raise the alkalinity of the soil. Slightly alkaline soils will support many garden plants. Even most acid loving plants will be happy with slightly alkaline soils that are generously amended with organic matter. The pH of an acidic soil is 6.9 or lower while that of an alkaline soil is 7.1 or higher. If a simple pH test of the soil indicates a pH reading over 8.0, the pH should be reduced. This can be accomplished by adding agricultural sulfur or an acidifying fertilizer such as ammonium sulfate.

Shade and acid loving plants do not like greywater. Their native habitats are forested areas where acid soils predominate. A brief listing of plants that are and are not suitable for the alkaline conditions often associated with greywater irrigation is included on the next page.

#### **Plants NOT COMPATIBLE with Greywater Irrigation Systems**

Rhododendrons	Begonias	Bleeding Hearts	Ferns
Foxgloves	Hydrangeas	Oxalis (Wood Sorrel)	Gardenias
Azaleas	Violets	Philodendrons	Camellias
Impatiens	Primroses	Crape Myrtle	Holly
Redwoods	Star Jasmine	Deodar Cedar	

#### **Plants COMPATIBLE with Greywater Irrigation Systems**

Oleander	Bougainvillea	Italian Stone Pine	Oaks
Palms	Arizona Cypress	Purple Hopseed Bush	Olive
Rose	Rosemary	Australian Tea Tree	Juniper
Ice Plant	Bermuda Grass	Many Native Plants	Agapanthus
Cottonwood	Honeysuckle		