



# GRAYWATER

Development Services Department  
3232 Main Street, Lemon Grove, CA 91945  
Phone 619-825-3805  
[www.lemongrove.ca.gov](http://www.lemongrove.ca.gov)

INFORMATION  
BULLETIN

16

AUGUST 2015

Using graywater is an excellent way to recycle and conserve water, and can help you reduce potable water consumption. Your indoor water can be reused as graywater, providing a constant source of recycled water for irrigating landscape (excluding vegetable gardens). A standard home generates about 160 gallons of graywater per day, or nearly 60,000 gallons per year. A family of four could reuse 22,000 gallons a year by tapping the rinse water from its washing machine.

## What is Graywater?

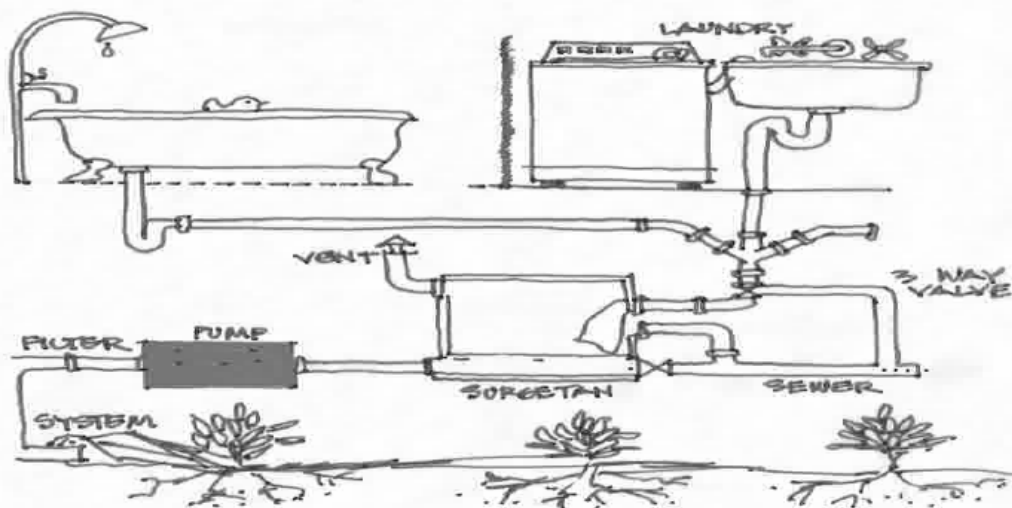
Graywater is untreated household wastewater which has not come into contact with toilet waste. It is used water from showers and baths, bathroom sinks and washing machines that can be directly reused for irrigation without undergoing a treatment process.

Graywater does not include water from toilets, kitchen sinks, dishwashers or laundry water from soiled diapers, due to potential health issues. Also, be aware that some soaps and detergents can contain chemicals that may be harmful to your plants when using graywater for irrigation.

## How do I put Graywater system in my home?

The steps you need to take depend largely on what type of system you plan to install. Some systems do not require permits. Chapter 16A of the California Plumbing Code details system requirements and plumbers and other professionals are available for the design and installation process if you feel you need help.

No-Permit System –Closed Clothes Washer Systems are graywater systems that utilize only a single domestic clothes washing machine in a one- or two- family dwelling, and do need a permit. The City has expanded the no-permit requirement to systems used for landscape irrigation that discharge less than 250 gallons a day, and primarily consist of systems taking discharge water from washing machines and wash basins. See below.



To qualify as “no permit,” these systems may not include a potable water connection or the use of a pump, or affect other plumbing, electrical, mechanical or building components, and must emphasize the use of Best Management Practices to prevent runoff.

Permitting is required for systems that take discharge water from other elements in a residence—such as bathtubs and showers—that require more extensive in-house plumbing, electrical or mechanical modifications, or the use of a pump.

## I. DEFINITIONS

A. Graywater is defined as untreated wastewater that has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes. Graywater includes but is not limited to wastewater from bathtubs, showers, bathroom washbasins, clothes washing machines, and laundry tubs, but does not include wastewater from kitchen sinks, dishwashers, toilets or bidets.

B. Clothes Washer System. A graywater system utilizing only a single domestic clothes washing machine in one-or two-family dwelling.

## II. APPROVAL REQUIREMENTS

These general rules and regulations apply to single family residential buildings only. A plumbing permit is required for all graywater system.

**Exception:** a clothes washer system that complies with all of the following requirements, does not require a plumbing permit:

1. The design shall allow the user to direct the flow to the irrigation or disposal field or the building sewer. The direction control of the graywater shall be clearly labeled and readily accessible to the user.
2. The installation, change, alteration or repair of the system does not include a potable water connection or a pump and does not affect other building, plumbing, electrical or mechanical components including structural features, egress, fire-life safety, sanitation, potable water supply piping or accessibility. The pump in a cloth washer, shall not be considered part of the gray water systems.
3. The graywater shall be contained on the site where it is generated. 4. Graywater shall be directed to and contained within an irrigation or disposal field.
5. Ponding or runoff is prohibited and shall be considered a nuisance.
6. Graywater may be released above the ground surface provided at least two (2) inches (51 mm) of mulch, rock, or soil, or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.
7. Graywater systems shall be designed to minimize contact with humans and domestic pets.

## Documents Referenced in this Information Bulletin

- 2013 California Plumbing Code, (CPC)
- Graywater Systems Flyer

8. Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.

9. Graywater shall not contain hazardous chemicals derived from activities such as cleaning car parts, washing greasy or oily rags, or disposing of waste solutions from home photo labs or similar hobbyist or home occupational activities.

10. Exemption from construction permit requirements shall not be deemed to grant authorization for any graywater system to be installed in a manner that violates any provisions of the California Plumbing Code (CPC) or any other laws or ordinances of the City of San Diego.

11. An operation and maintenance manual shall be provided. Directions shall indicate the manual is to remain with the building throughout the life of the system and indicate that upon change of ownership or occupancy, the new owner or tenant shall be notified the structure contains a graywater system.

## III. SUBMITTAL REQUIREMENTS

The following plans and documents shall be submitted along with the appropriate fees.

### PLANS

Provide two sets of the following plans and documents:

**1. Plot plan:** The items listed in the table 1602.4 of the CPC, along with the following information is required on the plans.

- a. Property lines, existing structures, set-backs, and paved areas.
- b. Drainage slope and direction.
- c. Location of retaining walls, drainage channels, water supply lines.
- d. Number of bedrooms and plumbing fixtures.
- e. Graywater system location, potable water connections, water meters and sewer lines.

**2. Graywater System plan:** Provide a plan showing:

- a. Graywater tank size and location. Indicate underground or above.
- b. Graywater tank installation details.
- c. All water lines draining to the tank.
- d. All waste pipes draining to the tank.
- e. Sizes of all waste pipes.
- f. All valves and backflow devices.

- g. Irrigation, disposal and mulch basin per CPC section 1602.11.
- h. Irrigation piping and trenching details.
- i. Irrigation pipe depth, length and spacing between the pipes.
- j. Irrigation equipment.

**3. Graywater Discharge:** The graywater discharge shall be calculated in accordance with CPC section 1602.8.1.

**4. Specification:** Provide all manufacturers specifications for graywater tank and associated piping including make and model number, size, dimensions and capacity of the tank.

**5. The following notes shall be included on the plans:**

- a. Kitchen sink, toilets, bidets and diaper soiled water shall not be in graywater system.
- b. No ponding, spray, or exposed runoff of graywater is allowed.
- c. All graywater systems must have an air-gap or suitable backflow prevention to protect the potable water system.
- d. Graywater is not for root crops or edible portions of food crops.
- e. The water piping must be marked as follows per CPC section 601.2 to indicate the following:
  - i. Potable water (blue or green background):  
“**Caution – Potable Water Line**”
  - ii. Non-potable water (Irrigation, from a potable source, yellow background):  
“**Caution – Non-potable Water Line**”
  - iii. Graywater:  
“**CAUTION: NON POTABLE WATER. DO NOT DRINK**” Markings shall be at intervals not to exceed five feet.

**6. Soil Absorption Rates and Groundwater Level:**

**a. Soil Absorption Rate:** The soil absorption rate must be specified on the plans. There are three options for determining the soil absorption rate:

**Option 1.** (Applies to single and two family residential only). Use 0.8 gals/ ft<sup>2</sup>/day (0.030 liters/m<sup>2</sup>/day) specified in CPC table 1602.10 (for irrigation systems that only utilize drip type emitters).

**Option 2.** A letter from a registered design professional classifying the soil per CPC table 1602.10.

**Option 3.** Absorption rate based on percolation testing by a registered design professional. Submit a report that includes location of test excavations, logs

of test excavations, percolation test method, test results, conclusions and recommendations.

**b. Groundwater level:** The applicant must provide evidence of groundwater depth. Groundwater level shall be determined and reported by a registered design professional. The depth of the groundwater table shall be a minimum of three feet below the lowest point of discharge in the irrigation/disposal field. A geotechnical report previously prepared by a registered design professional for a site where a graywater system is proposed may contain sufficient evidence regarding groundwater level.

**Exception:** where the graywater irrigation field is proposed above an elevation of 100-feet above sea level and located in Geologic Hazard Categories 51, 52, or 55 as shown on the San Diego Seismic Safety Study Maps, evidence of groundwater level will not be required.

**IV. PLAN REVIEWS**

Plans for graywater systems require a review for compliance with the California Plumbing Code or percolation test report is submitted. Structural plan review may be required for tanks which are installed above ground.

**V. INSPECTIONS**

A minimum of two plumbing inspections will be required for the graywater system including rough plumbing inspection and final plumbing inspection. Additional inspections may be required for structural and/or geology.