



# Graywater Systems

CITY OF POWAY  
BUILDING DIVISION

13325 CIVIC CENTER DR. POWAY CA 92064  
(858) 668-4644 (858) 668-4645 / FAX (858) 668-1211

The purpose of this bulletin is to assist you through the permit process for residential graywater systems. It also provides information about submittal requirements, plan reviews, project inspections and associated fees.

## 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.

## Documents Referenced in this Information Bulletin

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

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.
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.