ICC Ventura Chapter - Public Information

GUIDELINES FOR THE INSTALLATION AND USE OF RESIDENTIAL LAUNDRY GRAYWATER DISPOSAL SYSTEMS (LGDS)

Chapter 16A "Nonpotable Water Reuse Systems" of the 2007 California Plumbing Code (CPC) was approved by the California Building Standards Commission and became effective on January 20, 2010. Chapter 16A establishes minimum requirements for the installation of Graywater systems in residential occupancies. This chapter contains provisions which allow the installation of an LGDS without a construction permit. It is important to remember that exemption from the permitting requirement does not mean the system is exempt from meeting the requirements of Chapter 16A.

This plan is intended to provide basic detailing and information to ensure that a homeowner wishing to install an LGDS can do so in a manner that will comply with the minimum requirements of state law. It also intends to ensure that the system will work properly and not become a nuisance in the future. Of course, any plumbing system that is not properly maintained over the long term will become a problem and may also create unsanitary conditions that could become a health hazard. Remember, maintenance is a critical element of any plumbing system! When using an LGDS, at least one small load of wash, per week, should be diverted to the sewer or septic system. This will ensure that the trap at the bottom of the stand pipe remains full and will prevent sewer gases from entering the home.

What is a Laundry Graywater Disposal System? A Graywater system utilizing only a single domestic clothes washing machine in a one or two family dwelling.

Where can a Laundry Graywater Disposal System be installed? An LGDS system can be constructed on the site of a single-family dwelling where soil conditions are such the Graywater will be adequately absorbed into the soil.

Where can the clothes washing machine be located? To use these guidelines the clothes washing machine shall be located at an exterior wall. For clothes washing machines located at an interior wall the proper plumbing permits must be obtained first in order to install new drain lines.

Can a filter be installed on the LDGS irrigation drain pipe? Although not required by the code, it is recommended that a filter is installed in the irrigation line at point before the perforated pipe. The filter will help prevent clogging of the drain holes.

What plants should I avoid watering with Graywater? There is a significant amount of information available on this topic. However, a general rule of thumb is that Graywater should not be used for irrigating food crops. It is OK to irrigate trees and shrubs.

A plumbing permit is not required for a Laundry Graywater Disposal System which is supplied only by a clothes washer and does not require the cutting of the existing plumbing piping provided it is in compliance with Section 1603A.1.1. Any such system must meet the following requirements provided in Section 16 to be considered permit exempt:

1. **1603A.1.1 #2** *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.*

   A diverter valve may be installed at the point of connection between the washing machine drain hose, the Graywater disposal line, and the standpipe leading to the sewer system. A diverter valve, if used, must be labeled and be easily reached by the user for changing the direction of the Graywater flow to either the receiving landscape or the sewer system. Graywater disposal piping downstream of the diverter valve should be identified with the words "CAUTION: NONPOTABLE WATER, DO NOT DRINK"

2. **1603A.1.1 #3** *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 Graywater system cannot have a direct connection to any potable water supply and must use gravity flow to the receiving landscape. Except for the pump in the washing machine, no pumps are allowed on this type of system. For your protection, the system must not interfere with, or change, other components of the house without first checking with and, if necessary, obtaining permits from the Division of Building and Safety. Do not conceal Graywater piping in the building walls.

3. **1603A.1.1 #4** *The Graywater shall be contained on the site where it is generated.*

   The receiving landscaping must be on the same property where the Graywater is produced. Under no circumstances can Graywater be allowed to run from one property to another and cannot be directed to an adjacent property or to the public street or road.

4. **1603A.1.1 #5** *Graywater shall be directed to and contained within an irrigation or disposal field.*

   Disposal/Irrigation field recommendations:
   - ✓ The disposal trench or mulch basin should be at least 13.5 lineal feet per occupant in the house.
   - ✓ The number of occupants should be determined by counting 2 for the first bedroom and 1 for each bedroom after that. For example, a 3 bedroom house would have 4 occupants.
   - ✓ 4 occupants multiplied by 13.5 feet per occupant equals a 54 foot long trench and disposal line.
   - ✓ Owners should also confirm that there is no groundwater within 3 feet of the bottom of the disposal area before installing the system. To do this, simply excavate a post hole down three feet, wait approximately 30 minutes, and look for the presence of water. If water is present, the Graywater Disposal System shall not be installed. In those areas where seasonal high groundwater is known and documented to be less than within 3 feet, installation should not take place.
   - ✓ Caution should be exercised if placing an irrigation or disposal field at the top of a slope. The concentrated discharge of graywater could saturate the slope and allow movement of the soil or the graywater could begin to drain down the surface of the slope. Therefore, irrigation or disposal lines should be no closer than 15 feet to the top of a slope.

5. **1603A.1.1 #6** *Ponding or runoff is prohibited and shall be considered a nuisance."*

   When planning and installing the disposal piping, depth and trench length is important. The lines should be below the surface of the ground and dispersed through a trench of adequate length so that over-saturation will not occur. Graywater cannot be allowed to accumulate on the ground and must not be allowed to runoff the property of where the system is located or to reach any surface body of water or discharge into a storm water drainage system. Graywater cannot be discharged to a public way.

6. **1603A.1.1 #7** *Graywater may be released above the ground surface provided at least two (2) inches of mulch, rock, or soil or a solid shield covers the release point. Other methods which provide equivalent separation are also acceptable.*

   Disposal area trenches should be at least 9 inches deep to ensure that the Graywater does not come to the surface. However, at a minimum, the trench must be at least 2 inches in depth and covered with mulch.

7. **1603A.1.1 #8** *Graywater systems shall be designed to minimize contact with humans and domestic pets.*

   When designing and installing the disposal piping, depth and trench length is important. The lines need to be far enough below the surface of the ground and dispersed through a trench of adequate length so that over-saturation will not occur. When the ground becomes over-saturated, it is more likely that pets and people could come in contact with the Graywater and ponding could occur.

8. **1603A.1.1 #9** *Water used to wash diapers or similarly soiled or infectious garments shall not be used and shall be diverted to the building sewer.*

   The diverter valve installed in the line from the washing machine will allow the user to easily change the direction of the flow of the Graywater. When clothing and diapers are soiled with human waste, the owner must be diligent to insure that the diverter valve is sending the wastewater to the sewer system and not to the landscaping.

9. **1603A.1.1 #10** *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.*

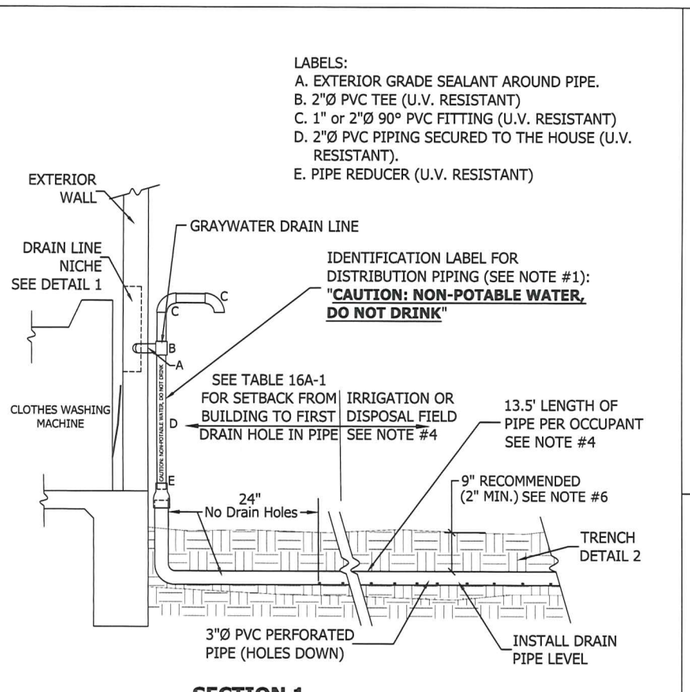
   As with clothing containing human waste, the diverter valve installed in the line from the washing machine will allow the user to easily change the direction of the flow of the Graywater. The owner or user must be diligent to insure that the diverter valve is sending the wastewater from oily rags, chemicals, etc., to the sewer system and not to the landscaping. The potential for contamination from hazardous waste could occur should these be deposited in your yard. Besides damaging your plants, your pets could also be harmed if they were to come in contact with these chemical wastes.

10. **1603A.1.1 #11** *Exemption from construction permit requirements of this code shall not be deemed to grant authorization for any Graywater system to be installed in a manner that violates other provisions of this code or any other laws or ordinances of the Enforcing Agency.*

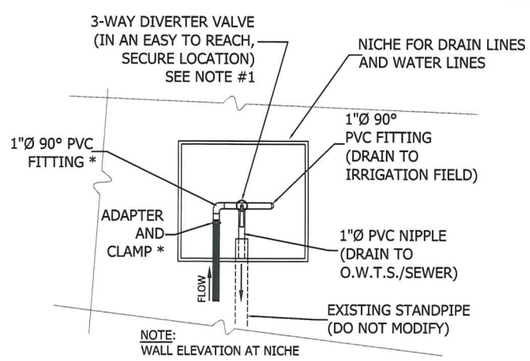
    The CPC does not require that a construction permit be obtained for an LGDS. However, not being required to have a permit does not also mean you can install a system in any manner you choose. Following the provisions of CPC Chapter 16A Section(s) 1603A.1.1 #1 through #13 is mandatory in order for an LGDS installation to remain exempt from permit. Also, a system that has been installed to comply with these standards is likely to perform better, and require less maintenance than a non-compliant system. It is also important to recognize that if an LGDS is installed without complying with these standards, it is no longer an exempt system and must be permitted and inspected for compliance. Additionally, in order for an LGDS to remain permit exempt, the installation of an LGDS must not require the alteration of existing plumbing, mechanical, or electrical systems. Also, except for the penetration to the exterior for the Graywater line feeding the landscaping, the building walls, roof or foundation cannot be modified. Should your proposed installation necessitate the modification of any of these systems, staff in the Building and Safety office is available to assist you in obtaining the necessary permits.

11. **1603A.1.1 #12** *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.*

    A simple set of instructions should be prepared for using and maintaining your LGDS. Information should include a copy of this plan, operating instructions for diverting the Graywater between the sewer/septic system and the landscaping.

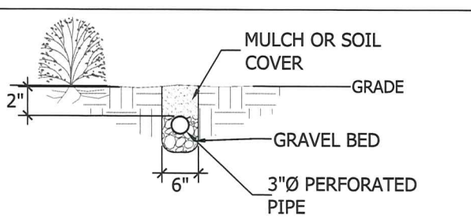


SECTION 1
EXTERIOR OF BUILDING

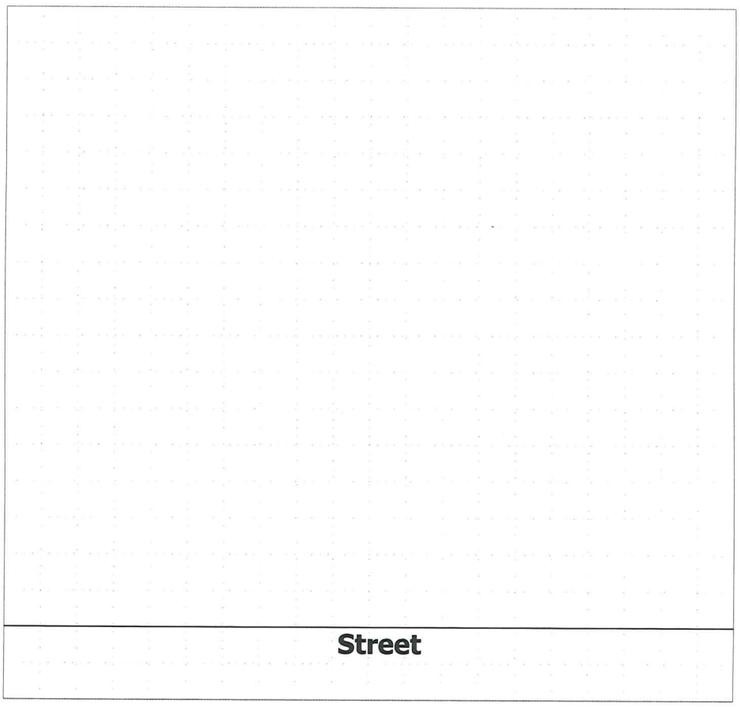


DETAIL 1
N.T.S.

* IRRIGATION PIPING LEADING TO THE DISPOSAL AREA MUST NOT BE SMALLER THAN THE WASHER HOSE.



DETAIL 2:
DISPOSAL/IRRIGATION FIELD RECOMMENDATIONS



PLOT PLAN
N.T.S.

Instructions:

1. Use this space to sketch your house, yard, and layout where you want the graywater system.
2. Disposal lines must be 5 feet from property line.
3. The Graywater shall be contained on the site where it is generated. Graywater cannot be directed to an adjacent property or to the public street or road.

Minimum Horizontal Distance Required From:	Tank	Irrigation Field	Disposal Field
	Feet (mm)	Feet (mm)	Feet (mm)
Building Structures [1]	5 (1524 mm) [2]	2 (610 mm)	5 (1524 mm)
Property line adjoining private property	5 (1524 mm)	1.5 (458 mm)	5 (1524 mm)
Water supply wells [3]	50 (15,240 mm)	100 (30,480 mm)	100 (30,480 mm)
Streams and lakes [3]	50 (15,240 mm)	100 (30,480 mm) [4, 5]	100 (30,480 mm) [4]
Sewage pits or cesspools	5 (1524 mm)	5 (1524 mm)	5 (1524 mm)
Sewage disposal field	5 (1524 mm)	4 (1219 mm) [6]	4 (1219 mm) [6]
Septic tank	0 (0 mm)	5 (1524 mm)	5 (1524 mm)
Onsite domestic water service line	5 (1524 mm)	0 (0 mm)	0 (0 mm)
Pressurized public water main	10 (3048 mm)	10 (3048 mm) [7]	5 (1524 mm) [7]

1. Building structures does not include porches and steps, whether covered or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.
2. Underground tanks shall not be located within a 45 degree angle from the bottom of the foundation, or they shall be designed to address the surcharge imposed by the structure. The distance may be reduced to six (6) inches (153 mm)
   for aboveground tanks when first approved by the Enforcing Agency.
3. Where special hazards are involved, the distance required shall be increased as directed by the Enforcing Agency.
4. These minimum clear horizontal distances shall also apply between the irrigation or disposal field and the ocean mean higher hightide line.
5. The minimum horizontal distance may be reduced to 50 feet (15,240 mm) for irrigation fields utilizing graywater which has been filtered prior to entering the distribution piping.
6. Plus two (2) feet (610 mm) for each additional foot of depth in excess of one (1) foot (305 mm) below the bottom of the drain line.
7. For parallel construction or crossings, approval by the Enforcing Agency shall be required.

TABLE 16A-1:
LOCATION OF GRAYWATER SYSTEMS