



LOS ANGELES COUNTY ♦ DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH



CROSS CONNECTIONS AND WATER POLLUTION CONTROL PROGRAM
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**GUIDELINES FOR PIPELINE CONSTRUCTION AND INSTALLATION -
FOR THE SAFE USE OF RECYCLED / RECLAIMED WASTEWATER**

PURPOSE: As a result of increasing availability of recycled / reclaimed wastewater and an increased need for the transmission and use thereof, the Department of Public Health – Environmental Health (the Department) has found it necessary to establish the following regulations for pipeline construction and installation as well as for the safe use of recycled / reclaimed wastewater. These regulations are intended to protect public health by ensuring the safety of our domestic potable water supplies.

BACKGROUND: A recent increase in the number of inquiries and interest displayed regarding the use of recycled / reclaimed water, in the ongoing efforts to conserve water, have necessitated the need to establish definitions, standards and regulation for the uniform review and approval of recycled / reclaimed wastewater. Recycled / reclaimed water may be used for surface irrigation of the following: food crops; parks and playgrounds; school yards; residential landscaping; and unrestricted access golf courses.

DEFINITIONS:

Gray Water means untreated wastewater that has not come into contact with toilet waste, kitchen sink waste, dishwasher waste or similarly contaminated sources. Gray water includes water from bathtubs, showers, bathroom wash basins, clothes-washers and laundry tubs.

Non-Potable Water means water which is unfit for human or animal consumption due to contaminants that exceed the current permissible Maximum Contaminant Level (MCL) in drinking water.

Potable Water means water which is fit for consumption by humans and other animals. The U.S. Environmental Protection Agency (EPA) identifies contaminants that may adversely affect public health and occur in drinking water with a frequency and at levels that pose a threat to public health. The EPA establishes (MCLs) for both biological and chemical contaminants permissible in drinking water. These MCLs become enforceable standards that determine the potability of water.

Recycled / Reclaimed Water means non-potable water that meets or as a result of treatment, meets federal requirements for its intended uses. The level of treatment and quality of the reclaimed / recycled water shall be approved by the Authority Having Jurisdiction. Reclaimed / recycled water systems shall have no connection to any potable water system, with or without mechanical backflow prevention devices.

RECYCLED / RECLAIMED WASTEWATER SYSTEMS SHALL BE CONSTRUCTED IN COMPLIANCE WITH APPLICABLE POTABLE WATER SYSTEM CONSTRUCTION STANDARDS AS WELL AS THOSE SPECIFIED IN “THE PURPLE BOOK”, CALIFORNIA HEALTH LAWS RELATED TO RECYCLED WATER, (CALIFORNIA HEALTH AND SAFETY CODE, WATER CODE, TITLES 22 AND 17 OF THE CALIFORNIA CODE OF REGULATIONS) AND THE LOS ANGELES COUNTY CODE (LACC), TITLE 28 – PLUMBING, APPENDIX J.

PRELIMINARY REQUIREMENTS

- Plans and specifications for recycled / reclaimed wastewater distribution systems, as well as the use and operation of such systems shall be submitted to the Department for review and approval prior to construction or implementation.
- Prior to commencing construction, the Contractor shall contact the Department to schedule an inspection of the proposed on-site recycled / reclaimed and potable water work.
- No piping for potable or recycled / reclaimed water in conjunction with a specified project shall be installed prior to plan check approval and preliminary inspection.
- Upon completion of construction, no excavation or open trench may be backfilled without first securing the Department approval. Any areas backfilled without prior approval will be required to be exposed and corrected as necessary.
- Only a Department approved temporary water connection, to a potable water supply via a dedicated, approved, reduced-pressure-principle backflow prevention device shall be permitted to be utilized for the purpose of flushing, pressure testing, construction, landscape use or the final cross-connection testing.

SEPARATION REQUIREMENTS

The maximum attainable separation of recycled / reclaimed wastewater lines and potable water lines shall be enforced in order to minimize potential risks associated with pipeline breaks resulting in infiltration of wastewater from leaking wastewater lines into domestic water lines, or accidental cross-connections between recycled wastewater and potable water systems.

- Parallel Construction: A horizontal separation of at least ten feet (10') shall be required between pressurized, buried, recycled / reclaimed and potable water piping (all distance to be measured from pipeline outside diameter).

- Cross-Over Construction: Buried potable water pipes crossing over pressurized recycled / reclaimed water pipes shall be laid not less than twelve inches (12") above the reclaimed water pipes. Reclaimed water pipes laid in the same trench or crossing-over building sewer or drainage piping shall be installed in compliance with the LACC – Title 28, Plumbing, Sections 609.0 and 720.0.
- Unused or Abandoned Potable Water Lines: These lines are to be severed as close to water mains as practical, capped, and a ten foot (10') section of abandoned line removed and cemented under direct supervision by the Department.
- Existing On-site Piping: Maximum separation of recycled / reclaimed wastewater lines and potable water lines shall be maintained upon system additions or modification.

PIPELINE MATERIALS AND IDENTIFICATION

All recycled / reclaimed water pipe materials, valves and fittings shall conform to the requirements of the LACC – Title 28, Plumbing, Sections 604.0, 605.0 and 606.0.

All recycled / reclaimed wastewater lines (pressure / non-pressure), valve boxes, hydrants and appurtenances shall be identified to clearly distinguish between recycled / reclaimed wastewater, non-potable and potable water systems (as specified in LACC – Title 28, Plumbing, Appendix J).

- Recycled / Reclaimed Wastewater: All buried, recycled, wastewater systems (pressure / non-pressure) shall utilize purple pipe with black uppercase lettering "CAUTION: RECYCLED WATER – DO NOT DRINK" printed on opposite sides of the pipe. For limited application, the use of continuous lettering on three inch (3") minimum width purple tape with one inch black or white contrasting uppercase lettering "CAUTION RECYCLED WATER – DO NOT DRINK" permanently affixed at intervals not to exceed five feet, atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping, hydrants and quick couplers. All valves, except fixture supply control valves shall be equipped with a locking feature. All mechanical equipment that is appurtenant to the recycled / reclaimed water system shall be painted purple.
- Potable Water: All potable water lines shall be installed in accordance with the Uniform Plumbing Code and all other applicable potable water system construction standards. All buried potable water lines shall be clearly identified by continuous lettering on three inch (3") minimum width blue tape with one inch (1") white lettering bearing the repeated wording "POTABLE WATER" permanently affixed at ten foot intervals atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping and hydrants. Identification tape is not necessary for extruded colored PVC with continuous wording "POTABLE WATER" printed in contrasting lettering on opposite sides of the pipe.

- **Non-Potable Water:** All non-potable irrigation / industrial water lines (pressure / non-pressure) shall be identified by continuous lettering on three inch (3”) minimum width tape with one inch (1”) contrasting lettering bearing the continuous uppercase lettering “NON-POTABLE WATER – DO NOT DRINK” permanently affixed at ten foot (10’) intervals atop all horizontal piping, laterals and mains. Identification tape shall extend to all valve boxes and / or vaults, exposed piping, hydrants and quick couplers. Exposed piping, valve boxes, vaults, control valves, quick coupling valves, outlets and related appurtenances shall be color-coded and labeled / tagged to differentiate between recycled / reclaimed wastewater, potable water and non-potable water systems. Tags identifying recycled / reclaimed water shall have the appropriate identification on both sides (wording on one side and symbol on the opposite side).



THE SAFE USE OF RECYCLED / RECLAIMED WATER **PROTECTS POTABLE WATER**

- Deteriorated or inadequately-protected well water casings shall be repaired or replaced to protect aquifers against contamination from recycled / reclaimed wastewater systems.
- An On-Site Water Supervisor shall be appointed, having the responsibility of oversight for the protection of the potable water system (provided for under Title 17, Section 7586, and California Code of Regulations). The name and position of the On-Site Water Supervisor shall be reported to the water purveyor and to the Department. This position will be responsible for the installation, operation and maintenance of the recycled / reclaimed wastewater and potable water systems; authorization of any piping changes or additions to either the potable or recycled systems; prevention of potential hazards; implementation of the regulations; and coordination with the Cross-Connection Program of the water purveyor and of this Department.
- Hose bibbs shall not be permitted in any areas of public access to recycled / reclaimed wastewater systems, to prevent unauthorized use of recycled wastewater. Quick-couplers are permitted in lieu of hose-bibb outlets but shall only be connected to recycled / reclaimed wastewater lines. Hose bibbs may be permitted in areas that are not accessible to the public, provided they are properly identified with permanently affixed tags, labels, or plates with uppercase lettering “RECYCLED WATER – DO NOT DRINK” in English.

- The use of recycled / reclaimed wastewater for irrigation purposes shall minimize exposure of the wastewater spray to drinking fountains and picnic tables through selective location of equipment and by appropriate irrigation system design. Additionally, the following measures should be taken: recycled wastewater spraying shall be done during hours of least public exposure; any area where recycled wastewater is released, used or impounded should be posted, informing the public that recycled water is being used; and irrigation practices utilizing recycled water shall be controlled to prevent surface runoff.

BACKFLOW PROTECTION

- There shall be no interconnection between a potable water system and a recycled / reclaimed water system within the user's premises.
- A dye or pressure test shall be utilized to confirm the physical separation of a recycled wastewater system and a potable water system. Testing shall be performed in conjunction with the Water Purveyor and this Department and conducted before the introduction of recycled wastewater.
- An approved backflow prevention device shall be installed at the potable water service connection.
- In a recycled / reclaimed wastewater distribution system, a backflow prevention device may be required at the recycled wastewater meter or at specific on-site locations where said use could degrade the quality of the recycled wastewater supply.

