

Chapter 14.04 - WATER SYSTEM POLLUTION CONTROL*

Sections:

14.04.010 - Purpose.

The purpose of the city council in adopting this chapter is to:

- A. Protect the public potable water supply of the city from the possibility of contamination or pollution by isolating within a user's private water system(s) such contaminants or pollutants that could backflow into the public water system; and
- B. To promote the elimination or control of existing cross connections, actual or potential, between the customer's water system(s) and nonpotable water systems; and
- C. To meet the mandates of public health law concerning drinking water supplies as outlined in the Federal Safe Drinking Water Act and in Title 17 of the California Code of Regulations; and
- D. To provide for the maintenance of a continuing program of cross-connection control that will systematically and effectively prevent the contamination or pollution of the city's potable water system.

(Ord. 809 § 1 (part), 1994.)

14.04.020 - Definitions.

The following words and phrases shall apply to the provisions of this chapter except where the context otherwise requires:

"Administrator" means the administrator of the program.

"Air-gap separation" means a physical break between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the top rim of the vessel, in no case less than one inch.

"Approved backflow-prevention assembly" means an assembly that has been manufactured in full conformance with the latest standards established by the American Water Works Association (AWWA) titled:

"Standard for Double Check Valve Backflow-Prevention Assembly," and "Standard for Reduced-Pressure Principle Backflow-Prevention Assembly," and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCHR) of the University of Southern California established by "Specification of Backflow-Prevention Assemblies" - Sec. 10 of the most current issue of the Manual of Cross-Connection Control.

Said AWWA and FCCHR standards and specifications have been adopted by the city. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCCHR specifications. Laboratories have been qualified to test and certify backflow preventers.

Backflow preventers that may be subjected to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval from a testing laboratory and are listed on the laboratory's current list of approved backflow-prevention assemblies may be used without further testing or qualification.

"Approved check valve" means a check valve that seats readily and completely, which is carefully machined to have free moving parts and assured watertightness. The face of the closure element and valve seat must be bronze, composition, or other noncorrodible material which will seat tightly under all prevailing conditions of field use. Pins and bushings shall be of bronze or other noncorrodible, nonsticking material, machined for each, dependable operation. The closure element, i.e., the clapper, shall be internally weighted or otherwise internally equipped to promote rapid and positive closure in all sizes where this feature is obtainable.

"Approved double check valve assembly" means an assembly of at least two independently acting approved check valves including tightly closing shutoff valves on each side of the check valve assembly and suitable leak-detector drains plus connections available for testing the watertightness of each check valve. These devices shall be installed per city's standards.

"Approved reduced pressure principle backflow-prevention device" means a device incorporating two or more check valves and an automatically operating differential relief valve located between the two checks, two shutoff valves and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two check valves, less than the pressure on the public water supply side of the device. At cessation of normal flow the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging into the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere thereby providing an air gap in the device. To be approved these devices must be readily accessible for maintenance and testing and installed in a location where no part of the valve will be submerged. These devices shall be installed per city's standards. The entire assembly shall meet the specifications and approval of an approved testing agency for backflow-prevention devices.

"Approved testing laboratory" means testing labs designated by the administrator.

"Approved water supply" means any water supply, whether public or private, approved by the State Department of Health and acceptable to the public water purveyor supplying a particular premises.

"Auxiliary water supply" means any water supply on or available to a premises other than an approved water supply as defined in this section.

"Backflow" means the undesirable reversal of flow in a potable water distribution system as a result of a cross connection.

"Backflow preventer" means an assembly or means designed to prevent backflow.

"Backpressure" means a pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler or another means that may cause backflow.

"Backsiphonage" means backflow caused by negative or reduced pressure in the supply piping.

"Contamination" means an impairment of the quality of water to a degree which creates an actual hazard to the public health through poisoning or the spread of disease.

"Cross-connection" means any actual or potential unprotected connection between any part of a water system used, intended to be used, or available as a source of water for drinking purposes and any source or system containing water or substance that is not or cannot be approved as potable, safe and wholesome for human consumption.

Hazard, Degree of. "Degree of hazard" means an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system:

1. Hazard, Health. "Health hazard" means a cross connection or potential cross connection involving any substance that could, if introduced in the potable water supply, cause death, illness, spread disease, or have a high probability of causing such effects.
2. Hazard, Plumbing. "Plumbing hazard" means a plumbing-type cross connection in a consumer's potable water system that has not been properly protected by an approved air gap or an approved backflow-prevention assembly.
3. Hazard, Nonhealth. "Nonhealth hazard" means a cross connection or potential cross connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable, if introduced into the potable water supply.
4. Hazard, System. "System hazard" means an actual or potential threat of severe damage to the physical properties of the public potable water system or the customer's potable water system or of a pollution or contamination that would have a protracted effect on the quality of the potable water in the system.

"Industrial fluids" means any fluid, liquid, emulsion, or solution which may be biologically, chemically, or otherwise contaminated or polluted in a form or concentration such as would constitute a health, plumbing, pollution, or system hazard if introduced into the water supply. This may include, but is not limited to, contaminated or polluted used waters, all types of process and used waters originating from the public

potable water system which have or may deteriorate in sanitary quality; chemicals in fluid form; acids and alkalis, circulating cooling waters that are biologically or chemically treated or stabilized with toxic substances, contaminated or polluted natural waters as from wells, springs, streams, rivers, bays, seas, irrigation canals or systems, et cetera; oils, gases, glycerine, paraffines, caustic and acid solutions and other liquids or gases used in industrial or other processes and for fire protection.

"Pollution" means an impairment of the quality of water which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

"Pollution hazard" means an actual or potential threat to the physical properties of the water system but which would not constitute a health or system hazard as defined.

"Program" means the city's cross-connection control program.

"Service connection" means the terminal end of the connection from the public potable water system, i.e., where the water purveyor loses jurisdiction and sanitary control over water at its point of delivery to the consumer's water system. If a meter is installed, then the service connection shall mean the downstream end of the meter. There shall be no unprotected takeoffs ahead of any meter or backflow-prevention device located at the point of delivery to a consumer's water system.

"Superintendent" means the city's water systems superintendent.

"Used water" means any water supplied by a water purveyor to the consumer's water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

"User" means the owner or occupant of a building or land who utilizes domestic water supplied by a purveyor.

"Water purveyor" means an agency responsible for operation of a public water system approved pursuant to provisions of the California Health and Safety Code, including, but not limited to, the city.

"Water supervisor" means the user or person on the user's premises charged with the responsibility of maintaining the user's water system free from cross-connections and other sanitary defects as required by regulations and laws. A certificate backflow-prevention device tester may not act as a water supervisor unless he is a full-time employee of the user having the day-to-day responsibility for the installation and use of the pipelines on the premises and for the avoidance of cross-connections on the premises.

(Ord. 809 § 1 (part), 1994.)

14.04.030 - Designation of cross-control program administrator.

The provisions of this chapter, as implemented by the director of community services, constitutes the program. The superintendent is designated as the program administrator. The superintendent shall be a certified cross-connection control specialist and shall administer all aspects of the program, including the

examination of backflow-prevention device testers, notification of required testing, and maintenance of files and records.

(Ord. 809 § 1 (part), 1994.)

14.04.040 - Establishment of cross-connection control program.

- A. The program shall provide, within the city's water service area, for the protection of the city's potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection.
- B. If, in the judgment of the administrator an approved backflow-prevention assembly is required at the customer's water service connection for the safety of the water system, the administrator shall give notice in writing to said customer to install such an approved backflow-prevention assembly(s) at specific location(s) on his/her premises. The customer shall immediately install such approved assembly(s) at his/her own expense; and, failure, refusal, or inability on the part of the customer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met. The time period allowed until water service is discontinued shall be dependent upon degree of hazard.

(Ord. 809 § 1 (part), 1994.)

14.04.050 - Requirements of cross-connection control program.

- A. Water System.
 - 1. The water system shall be considered as made up of two parts: the utility system (external system) and the customer/user system (internal system).
 - 2. Utility system shall consist of the source facilities and the distribution system, and shall include all those facilities of the water system under the complete control of the utility, up to the point where the customer/user's system begins.
 - 3. The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.
 - 4. The distribution system shall include the network of conduits used for the delivery of water from the source to the customer's system.
 - 5. The customer/user's system shall include those parts of the facilities beyond the termination of the utility distribution system that are utilized in conveying utility-delivered domestic water to points of use.
- B. Policy.
 - 1.

No water service connection to any premises shall be installed or maintained by the water purveyor unless the water supply is protected as required by state laws and regulations and this chapter. Service of water to any premises shall be discontinued by the water purveyor if a backflow-prevention assembly required by this chapter is not installed, tested, and maintained, or if it is found that a backflow-prevention assembly has been removed, bypassed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

2. The customer/user's system shall be open for inspection at all reasonable times to authorized representatives of the city to determine whether cross connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the administrator shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with applicable laws relating to plumbing and water supplies and the regulations adopted pursuant thereto.
3. If required, an approved backflow-prevention assembly shall be installed on each service line to a customer's water system at or near the property line. Installation shall be per standards established by the program.
 - a. In the case of premises having an auxiliary water supply that is not or may not be of safe bacteriological or chemical quality and that is not acceptable as an additional source by the administrator, the public water system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line appropriate to the degree of hazard.
 - b. In the case of premises on which any industrial fluids or any other objectional substances are handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line, appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the utility system that have been subject to deterioration in quality.
 - c. In the case of premises having (1) internal cross connections that cannot be permanently corrected and controlled, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross connections exist, the public water system shall be protected against backflow from the premises by installing an approved reduced pressure principle backflow-prevention assembly in the service line. This section shall also be applicable to those commercial or industrial buildings that are subdivided into several individual businesses or industries and for which there is a high tenant turnover.

4. The type of protective assembly required under subsection B3(a) through (c) of this section shall depend upon the degree of hazard that exists as follows:
 - a. In the case of any premises where there is an auxiliary water supply as stated in subsection B3(a) of this section and it is not subject to any of the following rules, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly.
 - b. In the case of any premises where there is water or substance that would be objectionable but not hazards to health, if introduced into the public water system, the public water system shall be protected by an approved double check valve assembly.
 - c. In the case of any premises where there is any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle backflow-prevention. Example of premises where these conditions will exist include sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and plating plants.
 - d. In the case of any premises where there are "uncontrolled" cross connections, either actual or potential, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly at the service connection.
 - e. In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly on each service to the premises.
 - f. In the case of any premises where, in the opinion of the administrator, an undue health threat is posed because of the presence of extremely toxic substances, the administrator may require an air gap at the service connection to protect the public water system. This requirement will be at the discretion of the administrator and is dependent on the degree of the hazard.
 - g. Fire sprinkler system lines shall have at a minimum a detector check double-check valve backflow-prevention device installed for external system protection, except in such cases where prohibition of such device is mandated by state law. If not restricted by state law and if warranted by degree of hazard, a reduced principle backflow-prevention device with detection meter may be required by the administrator.
5. An approved backflow-prevention assembly required herein shall be a model and size approved by the administrator.

6. It shall be the duty of the user at any premises where backflow-prevention assemblies are installed to have certified inspections and operational tests made at least once per year. In those instances where the administrator deems the hazard to be great enough, certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by a certified tester approved by the administrator. It shall be the duty of the administrator to see that these tests are made in a timely manner. The user shall notify the administrator in advance when the tests are to be undertaken so that the administrator may witness the tests if so desired. The customer user shall send copies of test results to the administrator. These assemblies shall be repaired, overhauled, or replaced at the expense of the customer-user whenever said assemblies are found to be defective. Records of such tests, repairs, and overhaul shall be submitted to the administrator.
7. All presently installed backflow-prevention assemblies that do not meet the requirements of this section but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained shall, except for the inspection and maintenance requirements under subsection B6, be excluded from the requirements of these rules so long as the administrator is assured that they will satisfactorily protect the utility system. Whenever the existing assembly is moved from the present location, requires more than minimum maintenance, or when the administrator finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow-prevention assembly meeting the requirements of this section.

(Ord. 809 § 1 (part), 1994.)

14.04.060 - Certification of backflow-prevention device testers.

- A. No person shall be deemed to be qualified to inspect, maintain, and repair backflow-prevention devices unless his/her qualifications have been established to the satisfaction of the administrator.

The administrator shall have authority to establish qualifications and conduct examinations in order to certify individuals that are qualified to inspect and maintain backflow-prevention devices. Upon successful completion of such examination and training as deemed necessary pursuant to provisions of this section, the person so examined shall receive a certificate of competence. Any limitations or conditions imposed on the examinee in the inspection and maintenance of backflow-prevention devices shall be stated upon the face of said certificate issued to such examinees.

The administrator shall make available to all owners of property upon which backflow-prevention devices are installed or required a list of persons qualified to install and maintain such devices.

Every person after receiving a certificate of competence shall be issued such identification as deemed appropriate and such identification shall be kept in the immediate possession of every person engaged in inspecting, maintaining, or repairing any backflow-prevention device.

- B. Every person desiring to qualify to inspect, maintain, or repair backflow-prevention devices shall make application to the administrator on forms provided.
- C. Every person holding a certificate of competence issued under provisions of this section shall be required to renew the certificate every three years.
- D. Every person receiving a certificate of competence under the provisions of this section shall be responsible for the competency and accuracy of all inspections and maintenance performed on any backflow-prevention device by any person under his authority and control.
- E. Every person issued a certificate of competence who fails to comply with any of the provisions of this chapter or knowingly and willingly falsifies inspection and maintenance reports submitted to the administrator shall have such certificate immediately revoked, and shall not be considered for recertification for a period of two years.

(Ord. 809 § 1 (part), 1994.)

14.04.070 - Booster pumps—Regulation.

When it becomes necessary, on account of low pressure or special operating conditions, to install a booster pump on the service to any premises, such pump shall be equipped with a low pressure cutoff switch designed to shut off the pump when the pressure on the inlet side is twenty-five p.s.i.g. or lower. It shall be the duty of the water user to maintain the cutoff device in proper working order, and to certify to the administrator at least once a year that the device is operable.

(Ord. 809 § 1 (part), 1994.)

14.04.080 - County health department responsibility for water systems on customer premises.

- A. The county health department shall be responsible for internal water system protection. The International Association of Plumbing and Mechanical Official Uniform Plumbing Code shall be utilized regarding cross-connection control within each customer/user's premises.
- B. With the permission of the administrator, internal cross-connection control protection may be utilized for external (utility system) protection if such devices and/or means of protection are equivalent to that required for external protection; if such devices are inspected and maintained in accordance with this chapter; and if related test/maintenance/ repair reports are supplied to the administrator on at least an annual basis. Failure to comply with these requirements shall

mandate the customer installation of a device or devices for external system protection. Failure of the customer to install this device or devices shall initiate the discontinuance of water service to the customer's premises.

- C. Water systems for fighting fire, derived from a supply that cannot be approved as safe or potable for human consumption shall, wherever practicable, be kept wholly separate from drinking water pipelines and equipment. In cases where the domestic water system issued for both drinking and firefighting purposes, approved backflow-prevention devices shall be installed to protect such individual drinking water lines as are not used for firefighting purposes.
- D. Potable water pipelines connected to equipment for industrial processes or operations shall be disconnected therefrom if practicable. Where disconnection is not practicable, an approved backflow-prevention device, the type or kind depending on the degree of hazard, shall be located in the feed line to the process piping or equipment, beyond the last point from which drinking water may be taken.

In the event the particular process liquid is especially corrosive or apt to prevent reliable action of a mechanical backflow-prevention device, air-gap separation shall be provided. All backflow-prevention devices shall be repaired, overhauled, or replaced whenever they are found to be defective. Records of tests, repairs and replacements shall be submitted to the county health department and to the administrator if required.

- E. Sewage pumps and storm water pumps shall not have priming connections unless the drinking water system is protected as set forth in Section 14.04.050, and no connections shall exist between the drinking water system and any other piping, equipment or tank in any sewage treatment plant, sewage pumping station, or storm water pumping station.
- F. Backflow protection by an approved backflow-prevention device shall be provided on each drinking water pier-head outlet used for supplying vessels at piers or waterfronts. These assemblies must be located where they will prevent the return of any water from the vessel into the drinking water pipeline or into another vessel at such pier or waterfront.
- G. Backflow protection consisting of an air-gap or approved reduced pressure principle device shall be provided at all domestic water system outlets used for supplying permanent or portable tanks and vessels used or intended for use in spraying or otherwise disseminating fertilizer, fungicide, herbicides, insecticides, or other toxic substances.

Comparable backflow protection shall be provided at all domestic water system outlets supplying a field irrigation system of either a sprinkler or subsurface type.

- H. Where the premises contain dual or multiple water systems and piping, the exposed portions of pipelines shall be painted, banded, or marked at sufficient intervals to distinguish clearly which water is potable and which is not safe for consumption. All outlets from secondary or potentially

contaminated systems shall be posted as contaminated and unsafe for drinking purposes. All outlets intended for drinking purposes shall be plainly marked to indicate the fact.

When color marking is used, potable water lines shall be painted green and nonpotable water lines shall be painted yellow. This requirement may be met by painting three-inch wide bands green or yellow at intervals of not more than twenty-five feet and at points where piping passes through walls, floors or roofs in which case the bands shall be applied on both sides of the walls and both above and below the floor or roof. Points of outlets for nonpotable water shall be marked with a tag or color coded.

When tags are used, potable water lines shall be identified by three-inch diameter metal tags bearing the legend "safe water" in letters not less than one-half inch in height.

Nonpotable water lines shall be identified by firmly attached, metal tags having the shape of a four-inch equilateral triangle bearing the legend "unsafe water" in letters not less than seven-sixteenth inch in height.

As in the color bands, tags shall be attached to pipes at intervals of not more than twenty-five feet and at either side of walls and above and below points where pipes pass through floors and roofs.

- I. The county health department and the city shall be kept informed of the identity of the person responsible for the water piping on all premises concerned with this chapter. At each premises where it is necessary in the opinion of the health department or the city a water supervisor shall be designated. The water supervisor shall be responsible for the installation and use of pipelines and equipment for the avoidance of cross-connections, compliance with this chapter and for reporting to the water purveyor any changes in water usage.

In the event of contamination or pollution of the drinking water system due to a cross-connection on the premises, the county health department and the city shall be promptly advised by the person responsible for the water system so that appropriate measures may be taken to overcome the contamination or pollution.

(Ord. 809 § 1 (part), 1994.)

14.04.090 - Cross-connection survey required.

- A. Building plans shall be examined by the administrator to insure that the plumbing system does not contain cross-connections or potential cross-connections and meets the requirements of this chapter.
- B. The administrator shall have the authority to conduct a survey of new premises to determine the status of cross-connections or the cross-connection potential. Denial of entry upon such premises shall require customer installation of external system protection as determined by the administrator. Customer failure to install external system protection shall initiate the discontinuance of water service to the customer's premises.
- C.

Those commercial buildings or industrial buildings or other businesses that change ownership or type of business or type of process shall be required to undergo a cross-connection survey. The administrator shall direct the level of survey required. If entry upon the premises is requested by the administrator and this request denied, said administrator may require customer installation of external system protection. Customer failure to install external system protection shall initiate discontinuance of water service to the customer's premises.

(Ord. 809 § 1 (part), 1994.)

14.04.100 - Penalties for noncompliance.

The water purveyor shall have the authority to immediately discontinue service to any premises where cross-connection or other hazards to the water system are found to exist, and shall not again render service to the premises until such hazards are eliminated in accordance with this chapter. Any water user who violates any of the provisions of this chapter or who alters, bypasses, or renders inoperative any backflow-prevention device installed under the provisions of this chapter shall in addition to penalties provided by law, be subject to immediate discontinuance of water service. Service shall not again be rendered until such violation or noncompliance has been corrected. Charges for discontinuance of water service and reconnection of water service shall be applied in an amount as established by city ordinance.

(Ord. 809 § 1 (part), 1994.)

14.04.110 - Violation declared misdemeanor.

Any person violating any of the provisions of failing to comply with any mandatory requirements of this chapter is guilty of a misdemeanor.

(Ord. 809 § 1 (part), 1994.)

14.04.120 - Effective date of city cross-connection control program.

The program shall become effective on July 1, 1994.

(Ord. 809 § 1 (part), 1994.)