

# **WATER RESOURCES**



**Ord. No. O-003-94, § 1, 1-6-94**

**Ord. No. O-021-11, § 1, 4-21-11**

**CODE  
City of  
WILSON, NORTH CAROLINA**

**Chapter 44, Article II: Cross Connection Control**



Sec. 44-30. - Introduction.

- (a) The purpose of this "Cross Connection Control Ordinance" is to define the authority of the Water Distribution and Water Treatment Divisions of the Public Works Department of the City of Wilson as the water purveyor in the elimination of all cross connections within its public water supply.
- (b) This article will comply with the Federal Safe Drinking Water Act (P.L.93-523), the North Carolina State Administrative Code (Title 10, Chapter 10, Subchapter 10-D, Subparagraph .1006), and the North Carolina State Building Code (Volume II) as they pertain to cross connections with the public water supply.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-31. - Objectives of article.

The specific objectives of the "Cross Connection Control Ordinance" for the Water Distribution Department of the City of Wilson are as follows:

- (1) To protect the public potable water supply of the City of Wilson against actual or potential contamination by isolating within the consumer's private water system, contaminants or pollutants which could, under adverse conditions, backflow through uncontrolled cross connections into the public water system.
- (2) To eliminate or control existing cross connections, actual or potential, between the consumer's in-plant potable water system(s) and non-potable or industrial piping system(s).
- (3) To provide a continuing inspection program of cross connection control which will systematically and effectively control all actual or potential cross connections that will be installed in the future.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-32. - Responsibilities of the health agency, water purveyor, consumer and certified backflow prevention assembly tester.

(a) *Responsibilities—Health agency.*

- (1) The North Carolina Department of Environment, Health and Natural Resources (Division of Health Services) has the responsibility for promulgating and enforcing laws, rules, regulations and policies to be followed in carrying out an effective cross connection control program.
- (2) The North Carolina Division of Health Services also has the primary responsibility of insuring that the water purveyor operates the public potable water system free of actual or potential sanitary hazards, including unprotected cross connections. They have the further responsibility of insuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that he requires the installation, testing and maintenance of an approved backflow prevention assembly on the service connection when required.

(b) *Same—Water purveyor.*

- (1) The water purveyor's (City of Wilson) responsibility begins at the source and includes all of the public water distribution system, including the service connection, and ends at the point of delivery to the consumer's water system(s). In addition, the water purveyor shall exercise reasonable vigilance to insure that consumers have taken the proper steps to protect the public potable water system. To insure that the proper precautions are taken, the city is required to determine the degree of hazard to the public potable water system; to determine the degree of protection required; and to ensure proper containment protection through an ongoing inspection program.
- (2) When it is determined that a backflow prevention assembly is required for the protection of the public system, the city shall require the consumer, at the consumer's expense, to install an approved backflow prevention assembly at each service connection, to test immediately upon installation and thereafter at a frequency as determined by the water distribution department, to

properly repair and maintain such assembly or assemblies and to keep adequate records of each test and subsequent maintenance and repair, including materials and/or replacement parts.

- (c) *Same—Consumer.* The consumer has the primary responsibility of preventing pollutants and contaminants from entering his potable water system(s) or the public potable water system. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all of his water system(s). Upon notification from the city, the consumer, at his own expense, shall install, operate, test and maintain approved backflow prevention assemblies as directed by the water distribution department within the time limits set by section 7003-07. The consumer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and provide the water distribution department with copies of such records. The records shall be on forms approved by the water distribution department and shall include the list of materials or replacement parts used. Following any repair, overhaul, re-piping or relocation of an assembly the consumer shall have it tested to insure that it is in good operational condition and will prevent backflow. Tests, maintenance and repairs of backflow prevention assemblies shall be made by a certified backflow prevention assembly tester. A list of those who are certified can be obtained from the cross connection control coordinator.
- (d) *Same—Certified backflow prevention assembly tester.* When employed by the consumer to test, repair, overhaul or maintain backflow prevention assemblies, a backflow prevention assembly tester shall have the following responsibilities:
  - (1) The tester shall be responsible for making competent inspections and for repairing or overhauling backflow prevention assemblies and making reports of such repair to the consumer and responsible authorities on forms approved by the water distribution department. The tester shall include the list of materials or replacement parts used. The tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair and maintain backflow prevention assemblies. It will be the tester's responsibility to insure that original manufactured parts are used in the repair of or replacement of parts in a backflow prevention assembly. It will be the tester's further responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of the water distribution department. A certified tester shall perform the work and be responsible for the competency and accuracy of all tests and reports.
  - (2) All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which meets the University of Southern California's Foundation For Cross Connection Control and Hydraulic Research Approval, and has been evaluated and/or approved by the water distribution department. All test equipment shall be registered with the water distribution department cross connection control coordinator. All test equipment shall be checked for accuracy annually (at minimum), calibrated and certified to the water distribution department as to such accuracy/calibration, employing a calibration method acceptable to the water distribution department. All certified backflow prevention assembly testers must be re-certified every two (2) years through an approved backflow prevention certification program.
- (e) *Same—Backflow prevention advisory board.*
  - (1) A backflow prevention advisory board will be established to review issues or complaints raised by customers of the water distribution department, and/or by plumbing contractors, that wish to appeal a requirement as set forth in this article. The advisory board will also review appeals made by certified testers, to the water distribution department, regarding certification, revocation or suspension.
  - (2) The decision(s) and/or recommendations of the advisory board will be taken into consideration by the water distribution department, if appeals are carried to that level. All final decisions shall be made by the water distribution department.
  - (3) The advisory board will consist of a minimum of five (5) members, to include one (1) representative of the city plumbing inspections department, one (1) representative for the plumbing contractor's association or lawn irrigation contractors, or fire sprinkler contractors, one

(1) representative from the county health department, one (1) representative from the water distribution department, and one (1) representative from the fire department.

- (4) The advisory board may recommend the need for revisions, modifications or amendments to this article, as well as recommending maximum rates for the testing of backflow prevention assemblies.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-33. - Definitions.

The following words and phrases, when used in this chapter, shall have the meanings respectively ascribed to them in this section:

*Air-gap separation* means a physical separation between the free flowing discharge end of a potable water supply pipeline and an open or nonpressure receiving vessel. An "approved air-gap separation" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel; in no case less than one (1) inch (2.54 cm).

*Approved:*

- (1) The term "approved," as herein used in reference to a water supply, means a water supply that has been approved by the North Carolina Department of Environment, Health and Natural Resources (Division of Health Services).
- (2) The term "approved," as herein used in reference to air-gap separation, a pressure vacuum breaker, a double check valve assembly, a double check detector assembly, a reduced pressure principle backflow prevention assembly, a reduced pressure principle detector assembly or other backflow prevention assemblies or methods, means an approval by the water distribution department.

*Backflow* means the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source other than its intended source.

*Backflow prevention assembly, approved:*

- (1) The term "approved backflow prevention assembly" means an assembly used for containment purposes that has been investigated and approved by the water distribution department and has been shown to meet the design and performance standards of the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California. The approval of backflow prevention assemblies by the water distribution department is based on a favorable report by an approved testing laboratory, recommending such approval. (To be approved, an assembly must be readily accessible for in-line testing and maintenance.)
- (2) The term "approved backflow prevention assembly" also means an assembly used for isolation purposes that has been shown to meet the design and performance standards of the American Society of Sanitary Engineers (ASSE), the American Water Works Association (AWWA) or the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California.

*Backflow prevention assembly, unapproved* means an assembly that has been investigated by the water distribution department and has been determined to be unacceptable for installation within the city's water system. Consideration for disapproval and removal from the "approved list" shall be based upon the following criteria:

- (1) Due to poor performance standards;
- (2) Lack of or unavailability of repair parts; and/or
- (3) Poor service or response from assembly's factory representative(s).

*Backflow prevention assembly, type* means any effective assembly used to prevent backflow into a potable water system. The type of assembly used should be based on the degree of hazard, either existing or potential (as defined herein). The types are:

- (1) Double check valve assembly;
- (2) Double check detector assembly (fire system);
- (3) Pressure vacuum breaker;
- (4) Reduced pressure principle assembly;
- (5) Reduced pressure principle detector assembly (fire system);
- (6) Atmospheric (non-pressure) vacuum breaker.

*Backflow prevention assembly tester* means a person who has proven his/her competency to the satisfaction of the water distribution department. Each person who is certified to make competent tests, or to repair, overhaul and make reports on a backflow prevention assembly shall be knowledgeable of applicable laws, rules and regulations, and must hold a certificate of completion from an acceptable training program in the testing and repair of backflow prevention assemblies. All certified backflow prevention assembly testers must be re-certified every two (2) years through an approved backflow prevention certification program.

*Back-pressure backflow* means the reversal of flow caused by superior pressure in an owners private water system over that of the public potable water supply.

*Back-siphonage backflow* means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply system from any source other than its intended source caused by the sudden reduction of pressure in the potable supply system.

*Check valve, approved* means a check valve that is driptight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reverse to the normal flow. The closure element (e.g. clapper, poppet or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one (1) component of an approved backflow prevention assembly; i.e. pressure vacuum breaker, double check valve assembly or reduced pressure principle assembly.

*Consumer/customer* means any person, firm or corporation using or receiving water from the city water distribution system.

*Consumer's potable water system* means that portion of the privately owned potable water system lying between the point of delivery and point of use. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, store or use potable water.

*Consumer's water system* includes any water system located on the consumer's premises, whether supplied by public potable water or an auxiliary water supply. The system or systems may be either a potable water system or an industrial piping system.

*Containment* means preventing the impairment of the potable water supply by installing an approved backflow prevention assembly at the service connection.

*Contamination* means an impairment of the quality of water which creates an actual hazard to the public health through poisoning or through the spread of disease by sewage, industrial fluids or waste.

*Cross connection* means any unprotected actual or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas or substance other than the intended potable water with which the system is supplied. By-pass arrangements, jumper connections, removable sections, swivel or change-over devices and other temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross connections.

*Cross connection, point of* means the specific point or location in a consumer's potable water system where a cross connection exists.

*Double check valve assembly* means an assembly composed of two (2) independently operating, approved check valves, with tightly closing shutoff valves attached at each end of the assembly and fitted with properly located test cocks. This assembly shall only be used to protect against a non-health hazard (i.e., pollutant).

*Double check-detector assembly* means a specially designed assembly composed of a line-size approved double check valve assembly with a specific bypass water meter and a meter-sized approved double check valve assembly. The meter shall register accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall only be used to protect against a non-health hazard (i.e., pollutant).

*Hazard, degree of*, derives from the evaluation of conditions within a system which can be classified as either a "pollutional" (non-health) or a "contamination" (health) hazard.

*Hazard, health* means an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system to such a degree that there would be a danger to health.

*Health, non-health* means an actual or potential threat to the physical properties of the public or the consumer's potable water system or a contamination which would have a protracted effect on the quality of the potable water system. A non-health hazard is one that, if introduced into the public water supply system could be a nuisance to water customers, but would not adversely affect human health.

*Hazard, plumbing* means an internal or plumbing type cross connection on a consumer's potable water system that may be either a pollutional or a contamination type hazard. This includes but is not limited to cross connections to toilets, sinks, lavatories, wash trays, domestic washing machines and lawn irrigation systems. Plumbing type cross connections can be located in many types of structures including homes, apartment houses, hotels and commercial or industrial establishments. Such a connection, if permitted to exist, must be properly protected by an appropriate type of backflow prevention assembly.

*Hazard, pollutional* means an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system but which would not constitute a health or a system hazard as defined. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.

*Hazard, system* means an actual or potential threat or severe danger to the physical properties of the public or the consumer's potable water system or of a pollution or contamination which could have a protracted effect on the quality of the potable water in the system.

*Health agency* means the North Carolina Department of Environment, Health and Natural Resources (Division of Health Services) NCDEHNR.

*Industrial fluids* means any form or concentration of fluid, solutions, gases or solids which may be chemically and/or biologically, contaminated or polluted, such as would constitute a health, system, pollutional or plumbing hazard if introduced into an approved water supply. Such fluids include, but are not limited to: process waters; chemicals in fluid form; acids and alkalis; oils, gases; contaminated natural waters (i.e., wells, streams, rivers, irrigation canals or systems).

*Industrial piping system, consumer's*, means any system used by the consumer for transmission, confinement or storage of any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey or store substances which are or may be polluted or contaminated.

*Isolation* means the act of confining a localized hazard within a plumbing or distribution system by installing approved backflow prevention assemblies.

*Laboratory, approved testing:*

- (1) *Containment assemblies* means the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California or another laboratory having the equivalent facilities for both the laboratory and field evaluation of the assemblies.
- (2) *Isolation devices/assemblies* means the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California or another laboratory having the equivalent facilities for both the laboratory and field evaluation of the devices/assemblies approved by the American Water Works Association (AWWA) or the American Society of Sanitary Engineers (ASSE).

*Notification* or *notice* means written correspondence from either the City of Wilson or the North Carolina Department of Environment, Health and Natural Resources (Division of Health Services) requiring the installation of a backflow prevention assembly.

*Point of delivery* shall generally be at the property line of the customer, adjacent to the public street where the water distribution department's mains are located, or at a point on the customer's property where the meter is located. The customer shall be responsible for all water piping and control devices located on the customer's side of the point of delivery.

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

*Potable water* means water from any source which has been investigated by the North Carolina Department of Environment, Health and Natural Resources (Division of Health Services) and which has been approved for human consumption.

*Public potable water system* means any publicly or privately owned water system operated as a public utility, under a current health permit, to supply water for domestic purposes. This system will include all sources, facilities and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment and appurtenances used to produce, convey, treat or store potable water for public consumption or a use.

*Reduced pressure principle backflow prevention assembly* means an assembly consisting of a minimum of two (2) independently operating approved check valves, with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves. The first check valve reduces the supply pressure a predetermined amount so that during normal flow and at cessation of normal flow, the pressure between the checks shall be less than the supply pressure. In case of leakage of either check valve, the pressure differential relief valve, by discharge to atmosphere, shall operate to maintain the pressure between the checks less than the supply pressure. The unit shall include tightly closing shut-off valves located at each end of the assembly and each assembly shall be fitted with properly located test cocks. The assembly is designed to protect against a health hazard (i.e., contaminant).

*Reduced pressure principle, detector assembly* means a specially designed assembly composed of a line size approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. The meter shall register accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall be used to protect against health hazard (i.e. contaminant).

*Service connection* means the terminal end of a service connection from the public potable water system i.e., where the water distribution department loses jurisdiction and sanitary control over the water at its point of delivery to the consumer's water.

*Vacuum breaker, atmospheric type* (also known as the "non-pressure type vacuum breaker") means an assembly containing a float check, a check seat and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops the float falls and forms a check valve against back-siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. A shut-off valve immediately upstream shall be an integral part of the assembly. An atmospheric vacuum breaker is designed to protect against a non-health hazard (i.e. pollutant) under a back-siphonage condition only.

*Vacuum breaker, pressure type* means an assembly containing all independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shutoff valves attached at each end of the assembly. This assembly is designed to protect against a health hazard (i.e., contaminant) under a back-siphonage condition only.

*Water purveyor* means the owner or operator of a public potable water system, providing an approved water supply to the public.

*Water supply, approved* means any public potable water supply which has been investigated and approved by the North Carolina Department of Environment, Health and Natural Resources. This system must be operating under a valid health permit. In determining what constitutes an approved water supply, the North Carolina Division of Health Services has reserved the final judgement as to its safety and potability.

*Water supply, auxiliary* means any water supply on or available to the premises other than the purveyor's approved public potable water supply. These auxiliary waters may include water from another purveyor's public potable water supply, "used water", industrial fluids or any natural source such as a well, spring, river, stream, etc. These waters may be polluted, contaminated or objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

*Water supply, unapproved* means a water supply which has not been approved for human consumption by the North Carolina Department of Environment, Health and Natural Resources.

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

(Ord. No. O-003-94, § 1, 1-6-94)

#### Sec. 44-34. - Right of entry.

- (a) Authorized representative(s) from the water distribution department shall have the right to enter, upon presentation of proper credentials and identification, any building, structure or premises during normal business hours to perform any duty imposed by this article. Those duties shall include, but are not limited to, sampling and testing water, and/or inspections and observations of all piping systems connected to the public water supply.
- (b) Where a user has security measures in force which would require proper identification and clearance before entry into their premises, the user shall make necessary arrangements with the security guards so that upon presentation of suitable identification, water distribution department personnel will be permitted to enter, without delay, for the purposes of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.
- (c) Upon request, the consumer shall furnish to the water distribution department any pertinent information regarding the water supply system on such property where cross connections and backflow are deemed possible.

(Ord. No. O-003-94, § 1, 1-6-94)

#### Sec. 44-35. - Elimination of cross connections: degree of hazard.

When cross connections are found to exist, the owner, his agent, occupant or tenant will be notified in writing to disconnect the same within the time limit established by the water distribution department. Degree of protection required and maximum time allowed for compliance is based upon the potential degree of hazard to the public water supply system. The maximum time limits are as follows:

- (1) Cross connections with private wells or other unapproved auxiliary supplies of water: immediate disconnection of unapproved source.



- (2) All facilities which pose a health hazard to the potable water system must have a containment assembly in the form of a reduced pressure principle backflow prevention assembly within sixty (60) days.
- (3) All industrial and commercial facilities not identified as a "health hazard" shall be considered non-health hazard facilities. All non-health hazard facilities must install, as a minimum containment assembly, a double check valve assembly within ninety (90) days.
- (4) If, in the judgement of the water distribution department, an imminent health hazard exists, water service to the building or premises where a cross connection exists shall be terminated unless an air gap is immediately provided, or the cross connection is immediately eliminated.
- (5) Water mains, served by the city but not maintained by the water distribution department, will be considered cross connections, with degree of hazard to be determined by the water distribution department. Minimum protection by a double check valve assembly (DCVA) shall be required.
- (6) In the event that the water distribution department's cross connection control coordinator does not have sufficient access to every portion of a private water system. (i.e., classified research and development facilities; federal government property) to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduced pressure principle assembly shall be required as a minimum of protection.

In all such instances, the consumer shall provide the cross connection control coordinator a compliance report annually. The compliance report shall state with specificity the type of containment device installed, repair and maintenance reports, test procedures, date and results, and all other information requested by the cross connection control coordinator.

- (7) No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at a location equipped with an air gap or an approved reduced pressure principle backflow prevention assembly properly installed on the public water supply.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-36. - Installation of assemblies.

- (a) All backflow prevention assemblies shall be installed in accordance with the specifications furnished by the water distribution department and/or the manufacturer's installation instructions.
- (b) All backflow prevention assemblies shall be installed according to the requirements outlined in Section 1204.4 of the North Carolina Building Code (Volume II, latest edition).
- (c) All new construction plans and specifications, when required by the North Carolina Building Code and the North Carolina Division of Health Services (NCDEHNR), shall be made available to the water distribution department for review and approval, and to determine the degree of hazard.
- (d) Ownership, testing and maintenance of the assembly shall be the responsibility of the customer.
- (e) All double check valve assemblies must be installed in drainable pits wherever below ground installation is necessary, in accordance with detailed specifications provided by the water distribution department, and with prior approval from the cross connection control coordinator.
- (f) Reduced pressure principle assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged under any circumstances (pit and/or below grade installations are prohibited).

Double check valve assemblies may be installed in a vertical position with prior approval from the water distribution department's cross connection control coordinator, provided the flow of water is in an upward direction.

- (g) The installation of a backflow prevention assembly which is not approved must be replaced with an approved backflow prevention assembly.

- (h) The installer is responsible to make sure a backflow prevention assembly is working properly upon installation and is required to furnish the following information to the water distribution department within fifteen (15) days after a reduced pressure principle backflow preventer (RP), double check valve assembly (DCVA), or pressure vacuum breaker (PVB), double check detector assembly (DCDA), reduced pressure principle detector assembly (RPDA) is installed:
  - (1) Service address where assembly is located;
  - (2) Owner and address, if different from service address;
  - (3) Description of assembly's location;
  - (4) Date of installation;
  - (5) Installer, include name, plumbing company represented, plumbers license number and project permit number;
  - (6) Type of assembly, size of assembly;
  - (7) Manufacturer, model number, serial number;
  - (8) Test results/report.
- (i) When it is not possible to interrupt water service, provisions shall be made for a "parallel installation" of backflow prevention assemblies. The water distribution department will not accept an unprotected bypass around a backflow preventor when the assembly is in need of testing, repair or replacement.
- (j) The consumer shall, upon notification, install the appropriate containment assembly not to exceed the following time frame:
  - Health hazard .....60 days
  - Non-health hazard .....90 days
- (k) Following installation, all RP, DCVA, PVB, DCDA and RPDA are required to be tested by a certified backflow prevention assembly tester within ten (10) days.  
(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-37. - Testing and repair of assemblies.

- (a) Testing of backflow prevention assemblies shall be made by a certified backflow prevention assembly tester at the customer's expense. Such tests are to be conducted upon installation and on an annual basis. A record of all testing and repairs is to be retained by the customer. Copies of the records must be provided to the city water distribution department within ten (10) days after the completion of any testing and/or repair work.
- (b) Any time repairs to backflow prevention assemblies are deemed necessary, whether through annual required testing or routine inspection by the owner or by the water distribution department, these repairs must be completed within a specified time in accordance with the degree of hazard. In no case shall this time period exceed twenty-one (21) days:
  - Health hazard facilities .....14 days
  - Non-health hazard facilities .....21 days
- (c) All backflow prevention assemblies with test cocks are required to be tested with a minimum frequency of once per year as determined by the water distribution department. Testing requires a water shutdown usually lasting five (5) to twenty (20) minutes. For facilities that require an uninterrupted supply of water and when it is not possible to provide water service from two (2) separate meters provisions shall be made for a "parallel installation" of backflow prevention assemblies.

- (d) All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which meets the University of Southern California's Foundation for Cross Connection Control and Hydraulic Research approval. All test equipment shall be registered with the water distribution department. All test equipment shall be checked for accuracy annually (at a minimum) calibrated and certified to the water distribution department as to such accuracy calibration employing a calibration method acceptable to the water distribution department.
- (e) It shall be unlawful for any customer or certified tester to submit any record to the water distribution department which is knowingly false or incomplete in any material respect. It shall be unlawful for any customer or certified tester to knowingly fail to submit to the water distribution department any record which is required by this article. Such violations shall result in enforcement actions outlined in section 7003-12 of this article.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-38. - Facilities requiring protection.

- (a) Approved backflow prevention assemblies shall be installed on the service connection to any premises that the water distribution department has identified as having a potential for backflow.
- (b) The following types of facilities or services have been identified by the water distribution department as having a potential for backflow of non-potable water into the public water supply system. Therefore, an approved backflow prevention assembly shall be required on all such services according to the degree of hazard present. Other types of facilities or services not listed below may also be required to install approved backflow prevention assemblies if determined necessary in the sole discretion of the cross connection control coordinator. As a minimum requirement, all commercial services will be required to install a double check valve assembly unless otherwise listed below.
  - (1) Aircraft and missile plants: RP
  - (2) Automotive service stations, dealerships, etc.:
    - a. No health hazard: DCVA
    - b. Health hazard: RP
  - (3) Automotive plants: RP
  - (4) Auxiliary water systems:
    - a. Approved public/private water supply: DCVA
    - b. Unapproved public/private water supply: AG
    - c. Used water and industrial fluids: RP
  - (5) Bakeries:
    - a. No health hazard: DCVA
    - b. Health hazard: RP
  - (6) Beauty shops/barber shops:
    - a. No health hazard: DCVA
    - b. Health hazard: RP
  - (7) Beverage bottling plants: RP
  - (8) Breweries: RP
  - (9) Buildings: Hotels, apartment houses, public and private buildings or other structures having cross connections:
    - a. No health hazard(under five stories): DCVA

- b. Health hazard(under five stories): RP
  - c. All (over five stories): RP
- (10) Canneries, packing houses, and rendering plants: RP
- (11) Chemical plants: Manufacturing, processing, compounding or treatment: RP
- (12) Chemically contaminated water systems: RP
- (13) Commercial car-wash facilities: RP
- (14) Commercial greenhouses: RP
- (15) Commercial sales establishments: Department stores, malls, etc.:
  - a. No health hazard: DCVA
  - b. Health hazard: RP
- (16) Concrete/asphalt plants: RP
- (17) Dairies and cold storage plants: RP
- (18) Dye works: RP
- (19) Film laboratories: RP
- (20) Fire systems:
  - a. No Health Hazard meeting the requirements of the NFPA 13D residential fire sprinkler code for 1-inch to 2-inch multi-purpose domestic looped potable water fire sprinkler service. No other systems defined under NFPA 13D are acceptable without an approved backflow assembly. It shall also meet all requirements as established in Section 44-40
  - b. Systems three-fourths ( $\frac{3}{4}$ ) inch to two (2) inch:
    - No health hazard: DCDA
    - Health hazard (booster pumps, foam, antifreeze solution, etc.): RPDA
  - c. Systems two and one-half ( $2\frac{1}{2}$ ) inch to ten (10) inch or larger:
    - No health hazard: DCDA
    - Health hazard (booster pumps, foam, antifreeze solution, etc.): RPDA
- (21) Hospitals, medical buildings, sanitariums, morgues, mortuaries, autopsy facilities, nursing and convalescent homes, medical clinics and veterinary hospitals: RP
- (22) Laundries:
  - a. No health hazard: DCVA
  - b. Health hazard (i.e., Dry cleaners): RP
- (23) Lawn irrigation systems (split taps):
  - a. No health hazard: DCVA
  - b. Health hazard (booster pumps, chemical systems): RP
- (24) Metal manufacturing, cleaning, processing and fabricating plants: RP
- (25) Mobile home parks:
  - a. No health hazard: DCVA
  - b. Health hazard: RP

- (26) Oil and gas production, storage or transmission properties: RP
- (27) Paper and paper products plants: RP
- (28) Pest control (exterminating and fumigating): RP
- (29) Plating plants: RP
- (30) Power plants: RP
- (31) Radioactive materials or substances: plants or facilities handling: RP
- (32) Restaurants:
  - a. No health hazard: DCVA
  - b. Health hazard: RP
- (33) Restricted, classified or other closed facilities: RP
- (34) Rubber plants (natural or synthetic): RP
- (35) Sand and gravel plants: RP
- (36) Schools and colleges: RP
- (37) Sewage and storm drain facilities: RP
- (38) Swimming pools:
  - a. No health hazard (i.e., airgap): DCVA
  - b. Health hazard (i.e., direct connection): RP
- (39) Waterfront facilities and industries: RP

DCVA	=	Double Cheek Valve Assembly
RP	=	Reduced Pressure Principle Assembly
DCDA	=	Double Check Detector Assembly
RPDA	=	Reduced Pressure Detector Assembly
AG	=	Air Gap
PVB	=	Pressure Vacuum Breaker

(c) All assemblies and installations shall be subject to inspection and approval by the water distribution department pursuant to the terms of this article.

(Ord. No. O-003-94, § 1, 1-6-94; Ord. No. O-021-11, § 1, 4-21-11)

Sec. 44-39. - Connections with unapproved sources of supply.

(a) No person, firm or corporation shall connect or cause to be connected any auxiliary supply of water to the water system supplied by the city.

- (b) In the event of contamination of a potable water system, the consumer shall notify the water distribution department immediately in order that appropriate measures may be taken to overcome and eliminate contamination.

(Ord. No. O-003-94, § 1, 1-6-94)

Sec. 44-40. - Fire protection systems.

- (a) Only NFPA 13D multi-purpose two-story or less residential, one- and two-family dwellings with looped combination fire sprinkler systems/domestic water systems are accepted. Other systems under NFPA 13D are not accepted.

The multipurpose distribution loop shall be supplied with one (1) potable water service extending from the residential fire service water meter. The water service shall have no branch lines prior to the loop. The design of the building water distribution system shall be to incorporate cold water to all fixtures and sprinkler heads extending from the loop in the ceiling. Sprinkler head branch lines shall not exceed more than ten (10) feet in length. In addition to the installation requirements mentioned above, the system shall meet all other requirements pertaining to NFPA 13D looped combination fire sprinkler/domestic plumbing.

- (b) All connections for fire systems connected with the public water system, two (2) inches and smaller, not meeting the requirements of the NFPA 13D residential potable looped multi-purpose fire sprinkler system shall be protected with an approved double check valve assembly as a minimum requirement. All fire systems using toxic additives or booster pumps shall be protected by an approved reduced pressure principle assembly at the main service connection.
- (c) All connections for fire systems connected with the public water system three (3) inches and larger, shall be protected with an approved double check detector assembly as a minimum requirement. All fire systems using toxic additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.
- (d) All existing backflow prevention assemblies installed on fire sprinkler systems that do not meet Water Distribution Division specifications, or does not receive approval from the Cross Connection Control Coordinator, will not satisfy the requirements as set forth in this article. The consumer shall be required to install an approved double check detector assembly or reduced pressure principle detector assembly as required by this provision.
- (e) No private hydrants, or piping branches are permitted between the backflow prevention assembly and the water main.
- (f) Dedicated fire hydrants shall be the property of the City of Wilson Water Resources Division after the approved installation date and shall be installed between the main and the fire service backflow preventer.

Dedicated fire hydrants shall only be used by the City of Wilson.

No fire retardant chemicals shall be added to the water in a dedicated hydrant installed before the backflow assembly.

All dedicated hydrants are to be installed in the public right-of-way at a location not to exceed seventy-five (75) feet from the Fire Department connection located on the freeze proof enclosure.

- (g) Installation of Fire Protection Systems shall be per the City of Wilson Water Distribution Specifications and Drawings and per approval of the City of Wilson Fire Marshall.

(Ord. No. O-003-94, § 1, 1-6-94; Ord. No. O-021-11, §§ 2—6, 4-21-11)

Sec. 44-41. - Enforcement.

- (a) The owner, manager, supervisor or person in charge of any installation found not to be in compliance with the provisions of this article shall be notified in writing of the non-compliance and given specific corrective action(s) necessary to bring the installation into compliance. The time allowed for compliance shall be in accordance with section 44-36

- (b) The owner, manager, supervisor or person in charge of any installation which remains in non-compliance after the time prescribed in the initial notification, as outlined in section 44-36 shall be considered in violation of this article. and may be issued a civil citation by the water distribution department. Said citation shall specify the nature of the violation and the provision(s) of this article violated, and further notify the offender that the civil penalty for said violation is as set forth in paragraph (3) below and is to be paid to the city at the municipal building within thirty (30) days. If the penalty prescribed herein is not paid within the time allowed the city may initiate a civil action in the nature of a debt and recover the sums set forth in paragraph (3) below, plus the cost of the action.
- (c) The owner manager supervisor or person in charge of any installation found to be in non-compliance beyond the time limit provided for in the aforementioned notification shall be subject to a civil penalty of up to one thousand dollars (\$1,000.00) per violation. Each day in which a violation of any provision of this article shall occur or continue shall constitute a separate and distinct offense.
- (d) If in the judgement of the cross connection control coordinator, it appears that any owner, manager, supervisor or person in charge of any installation found to be in non-compliance with the provisions of this article willfully neglects their responsibility to correct any violation it shall result in discontinuance of water service until compliance is achieved.
- (e) Failure of a customer or certified tester to submit any record required by this article or the willful submission of falsified reports/records may result in a civil penalty of up to one thousand dollars (\$1,000.00) per violation. If a certified backflow prevention assembly tester knowingly submits falsified records to the water distribution department, the water distribution department shall take the necessary actions to revoke certification to test backflow prevention assemblies within the potable water system for a time period not to exceed one (1) year. The tester will then be required to complete an approved certification course to acquire a new certification. Falsification made to record and/or reports after becoming re-certified shall result in the permanent revocation of backflow testing certification in addition to a civil penalty (as stated herein).
- (f) Enforcement of this program shall be administered by the superintendent of the water distribution department or his authorized representative, being the cross connection control coordinator.
- (g) Requests for extension of time shall be made in writing to the cross connection control coordinator. All other appeals shall be made in writing to the backflow prevention advisory board through the water distribution department. Recommendations from the backflow prevention advisory board will be taken into consideration by the water distribution department during the review of any appeal.

(Ord. No. O-003-94, § 1, 1-6-94)