ARTICLE X. CROSS-CONNECTION CONTROL AND PREVENTION

Sec. 13-166. Standards.

Every source of contamination or possible contamination from any contaminant which originates from or is located at a residential or commercial establishment, which is connected to any public water supply, or which provides water to the public shall be equipped with the protection required under the provisions of this article.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-167. Definitions.

For the purpose of this article, the following definitions shall apply unless the context clearly indicates or requires a different meaning. If a word or term used in this article is not contained in the following list, its definition, or other technical terms used, shall have the meanings or definitions listed in the most recent edition of the Manual of Cross Connection Control published by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California. The following definitions shall apply to this article:

Air gap shall mean a physical separation between the free-flowing discharge end of a potable water supply piping and/or appurtenance and an open or nonpressure receiving vessel, plumbing fixture, or other device. An approved air-gap separation shall be at least twice the diameter of the supply pipe measured vertically above the overflow rim of the vessel, plumbing fixture, or other device, in no case less than one (1) inch.

Approved backflow prevention assembly or *backflow assembly* or *assembly* shall mean an assembly to counteract backpressure or prevent backsiphonage.

Atmospheric vacuum breaker backflow prevention device or *atmospheric vacuum breaker* or *AVB* shall mean a device used to prevent backsiphonage in nonhealth hazard conditions. This device cannot be tested and cannot prevent backpressure backflow.

Auxiliary supply shall mean any water source or system other than the public water system that may be available in the building or on the property, including groundwater or surface waters used for industrial, irrigation, or any other purpose.

Backflow shall mean the flow in the direction opposite to the normal flow or the introduction of any foreign liquids, gases, or substances into the water system of the city's water.

Backpressure shall mean any elevation of pressure in the downstream piping system, (by any means) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow and the introduction of fluids, mixtures, or substances from any source other than the intended source.

Boresight or *boresight to daylight* shall mean providing adequate drainage for backflow prevention assemblies installed in vaults through the use of an unobstructed drainpipe.

Commercial establishment shall mean any property or location which is used primarily for the manufacture, production, storage, wholesaling, or retailing of any good or ware which is or may be placed in the flow of commerce or any property or location which is used primarily for the provision of any service.

Commission shall mean the Texas Natural Resource Conservation Commission (TNRCC).

Contaminants shall mean any foreign material, solid or liquid, not common to the potable water supply which makes or may make the water unfit or undesirable for human or animal consumption.

Contamination shall mean the admission of contaminants into the potable water supply system.

Cross-connection shall mean any connection, physical or otherwise, between a potable water supply system and any plumbing fixture, or any tank, receptacle, equipment or device, through which it may be possible for any nonpotable, used, unclean, polluted, and contaminated water, or other substances, to enter into any part of such potable water system under any conditions or set of conditions.

Cross-connection control device shall mean any device placed upon any connection, physical or otherwise, between potable water supply system and any plumbing fixture, or any tank, receptacle, equipment or device, which is designed to prevent nonpotable, used, unclean, polluted, and contaminated water, or other substances, from entering into any part of such potable water system under any condition or set of conditions.

Degree of hazard shall mean the low or high hazard classification that shall be attached to all actual or potential cross-connections.

(1) *Health hazard* shall mean 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 that would be a danger to health.

(2) *High hazard* shall mean the classification assigned to an actual or potential cross-connection that potentially could allow a substance that may cause illness or death to backflow into the potable water supply.

(3) *Low hazard* shall mean the classification assigned to an actual or potential

cross-connection that potentially could allow a substance that may be objectionable but not hazardous to one's health to backflow into the potable water supply.

(4) *Plumbing hazard* shall mean an internal or plumbing-type cross-connection in a consumer's potable water system that may be either a pollutional or a contamination-type hazard.

(5) *Pollutional hazard* shall mean 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 system hazard, as defined. Maximum degree of intensity of pollution which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause damage to the system or its appurtenances.

(a) *System hazard* shall mean an actual or potential threat of severe danger to the physical properties of the public or consumer's potable water supply or of a pollution or contamination that would have a detrimental effect on the quality of the potable water in the system.

Director shall mean the director of the department who is vested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this article.

Double check detector backflow prevention assembly or *double check detector* or *DCDA* shall mean an assembly composed of a line-size approved double check assembly with a bypass containing a specific water meter and an approved double check valve assembly. The meter shall register accurately for very low rates of flow.

Double check valve backflow prevention assembly or *double check assembly* or *double check* or *DC* shall mean an assembly which consists of two (2) independently acting, approved check valves, including tightly closing resilient seated shutoff valves attached at each end of the assembly and fitted with properly located resilient seated test cocks.

Fireline tester shall mean a tester who is employed by a state-approved fireline contractor and is qualified to test backflow prevention assemblies on firelines only.

General tester shall mean a tester who is qualified to test backflow prevention assemblies on any domestic, commercial, industrial or irrigation service, except fireline.

Mobile unit shall mean any operation which may have the potential to introduce contaminants into a potable water system from a mobile source. These include, but are not limited to, carpet-cleaning vehicles, water-hauling vehicles, street-cleaning vehicles, liquid-waste vehicles, power-wash operations and pest-control vehicles.

Nonresidential use shall mean water used by any person other than a residential customer of the water supply and include all uses not specifically included in residential uses.

Person shall mean any individual, partnership, association, corporation, firm, club, trustee, receiver, and bodies politic and corporate.

Point-of-use isolation shall mean the appropriate backflow prevention within the consumer's water system at the point at which the actual or potential cross-connection exists.

Potable water supply shall mean any water supply intended or used for human consumption or other domestic use.

Premises shall mean any piece of property to which water is provided, including all improvements, mobile structures, and structures located on it.

Premises isolation shall mean the appropriate backflow prevention at the service connection between the public water system and the water user.

Pressure vacuum breaker backflow prevention assembly or *pressure vacuum breaker* or *PVC* shall mean an assembly which provides protection against backsiphonage, but does not provide adequate protection against backpressure backflow. The assembly is a combination of a single check valve with an AVB and can be used with downstream resilient seated shutoff valves. In addition, the assembly has suction and discharge gate valves and resilient seated test cocks which allows the full testing of the assembly.

Public water system or *system* shall mean any public or privately owned water system which supplies water for public domestic use. The system will include all services, reservoirs, facilities, and any equipment use in the process of producing, treating, storing, or conveying water for public consumption

Reduced pressure principle backflow prevention assembly or *reduced pressure principle assembly* or *RP assembly* or *RP* shall mean an assembly containing two (2) independently acting approved check valves together with a hydraulically operated, mechanically independent pressure differential relief valve located between the check valves and at the same time below the fires check valve. The assembly shall include properly located resilient seated test cocks and a tightly closing resilient seated shutoff valve [at] the end of the assembly.

Reduced pressure principle detector backflow prevention assembly or *reduced pressure detector* or *RPDA* shall mean an assembly composed of a line-size approved reduced pressure principle assembly with a bypass containing a specific water meter and an approved reduced pressure principle backflow prevention assembly. The meter shall register accurately for very low rates of flow.

Regulatory authority shall mean any municipal officer or department of the city appointed by the city manager to administer this article.

Representative of the water system shall mean a person designated by the city to perform cross-connection control duties that shall include, but are not limited to, cross-connection inspections and water use surveys.

Residential use shall mean water used by any residential customer of the water supply and include single-family dwellings, duplexes, multiplexes, housing and apartments where the individual units are each on a separate meter or, in cases where two (2) or more units are served by one (1) meter, the units are full-time dwellings.

Service connection shall mean the point of delivery [at] which the water purveyor loses control of the water.

Spill-resistant pressure vacuum breaker or *SVB* shall mean an assembly containing an independently operating, internally loaded check valve and independently operating, loaded air inlet valve located on the discharge side of the check valve. This assembly is to be equipped with a properly located resilient seated test cock and tightly closing resilient seated shutoff valves attached at each end of the assembly.

Tester shall mean a person that is a certified backflow prevention assembly technician approved by and registered with the city and the TNRCC.

Thermal expansion shall mean heated water that does not have the space to expand.

TNRCC shall mean the Texas Natural Resource Conservation Commission.

Used water shall mean water supplied by a public water system to a water user's system after it has passed through the service connection.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-168. Right-of-way encroachment.

No person shall install or maintain a backflow prevention assembly upon or within any city right-of-way except as provided in this section.

(1) A backflow prevention assembly required by the city may be installed upon or within any city right-of-way only if the owner proves to the city that there is no other feasible location for installing the assembly, and installing it in the right-of-way will not interfere with traffic or utilities. The city retains the right to approve the location, height, depth, enclosure, and other requisites of the assembly prior to its installation.

(2) All permits and inspections required by the City Code to perform work in the right-of-way shall be obtained.

(3) The assembly shall be installed below or flush with the surrounding grade except when it is not practicable to install it in this manner. Any assembly or portion of an assembly which extends above ground shall be located no closer than eighteen (18) inches to the face of the curb.

(4) The city shall not be liable for any damage done to or caused by an assembly installed in a right-of-way.

(5) A property owner shall, at the request of the city and at the owners expense, relocate a backflow prevention assembly which encroaches upon any city right-of-way when such relocation is necessary for street or utility construction or repairs for purposes of public safety.

(a)A person commits an offense if he/she fails to relocate a backflow prevention assembly located in or upon any city right-of-way after receiving a written order form the regulatory authority to do so.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-169. Multiple connections.

Any premises requiring multiple service connections for adequacy of supply and/or fire protection will be required to install a backflow assembly on each of the additional service lines to the premises. The type of assembly will be determined by the degree of hazard that could occur in the event of an interconnect between any of the buildings on the premises.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-170. Protection required; installation.

(a) The backflow prevention assembly protection which is required under this article shall be any of the duly authorized backflow prevention assemblies listed in the Uniform Plumbing Code, or as determined by the regulator authority. Each backflow prevention assembly must have been approved by the regulatory authority or his chosen representative in conjunction with the chief plumbing inspector of the city of the use contemplated by the commercial establishment prior to installation. Failure to obtain such approval prior to installation of the backflow prevention assembly may result in the backflow prevention assembly failing to meet final approval by the regulatory authority. The regulatory authority shall determine the type and location of backflow assembly to be installed within the area served by the city. The assembly will be required in each of the following circumstances, but the representative is in no way limited to the following circumstances:

(1) The nature and extent of any activity of the premises, or the materials used in connection with any activity or the premises, or materials stored on the premises could contaminate or pollute the potable water supply.

(2) Premises having any one (1) or more cross-connections [that are] identified or are present.

(3) Premises having any one (1) or more cross-connections and the cross-connection(s) is protected by an atmospheric vacuum breaker device (AVB).

(4) Internal cross-connections are present that are not correctable.

(5) Intricate plumbing arrangements are present which make it impractical to

ascertain whether cross-connections exist.

(6) There is a repeated history of cross-connections being established or reestablished.

(7) There is unduly restricted entry so that inspections for cross-connections cannot be made with sufficient frequency to assure that cross-connections do not exist.

(8) Materials are being used such that if backflow should occur a health hazard should result.

(9) Installation of an approved backflow prevention assembly is deemed to be necessary to accomplish the purpose of these regulations in the judgment of the city.

(10) An appropriate cross-connection survey report form has not been filed with the environmental services department of the city upon request of the city.

(11) A fire sprinkler system is connected to the city's water system.

(12) All new construction, if deemed necessary in the customer service inspection. The type of assembly will be commensurate with the degree of hazard as determined by the regulatory authority.

(13) When a building is constructed on commercial premises, and the end use of such building is not determined or could change, a reduced pressure principle backflow prevention assembly may be installed at the service connection that supplies water for public domestic use.

(14) Any used water return system.

(15) In the event a point-of-use assembly has not had the testing or repair done as required by this article, a premises isolation assembly will be required.

(16) If it is determined that additions or alterations have been made to the plumbing system without obtaining proper permits, premises isolation may be required.

(17) All multistory buildings or any building with a booster pump or elevated storage tank.

(18) Retrofitting will be required on all high hazard connection s and wherever else the city deems necessary to retrofit.

(b) All backflow prevention assemblies installed after September 3, 1996, shall be installed in a manner designed to facilitate ease of inspection by the regulatory authority of the city or his chosen representative. Any currently installed

backflow prevention assemblies which, in the opinion of the regulatory authority, are located in inaccessible locations, or where the tester is subject to physical danger, shall be relocated to an approved location.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-171. Testing of assemblies.

(a) The regulatory authority shall inspect and test, or cause to be inspected and tested, all assemblies in each of the following circumstances:

(1) Immediately after installations;

(2) Whenever the assembly is moved;

(3) A minimum of once a year;

(4) Premises that have been vacated and unoccupied for one (1) year, prior to reoccupancy;

(5) Immediately after repairs.

(b) All assembly testing shall be performed by a certified backflow prevention assembly tester, approved by the regulatory authority.

(c) Duly authorized employees of the city bearing proper credentials and identification are entitled to enter any public or private property at any reasonable time for the purpose of enforcing this article. Persons and occupants of premises which are provided water service by the city, either directly or indirectly, shall allow the city or their representatives ready access at all reasonable times to all parts of the premises for the purposes of inspection, testing, records examination, or in the performance of any of their duties. Where persons or occupants of premises have security measures in force which would require proper identification and clearance before entry into their premises, the persons and occupants of the premises shall make necessary arrangement s with their security guards so that, upon presentation of suitable identification, personnel from the city will be permitted to enter, without delay, for the purposes of performing their specific responsibilities.

(d) The city shall not be liable for damage to a backflow prevention assembly that occurs during testing.

(e) The regulatory authority may cause a water use survey to be conducted at any commercial establishment located in the city which is served by a public water supply or which provides water to the public. Upon determination by the regulatory authority that the commercial establishment falls under the provisions of this article and required a backflow prevention assembly, the regulatory authority shall issue a notice to abate the condition or order the commercial establishment to install the proper backflow prevention assembly.

(f) It is the responsibility of any person who owns or controls property to have all assemblies tested in accordance with this article. Assemblies may be required to be tested more frequently if the regulatory authority deems necessary.

(g) All results from assembly testing by a certified backflow prevention assembly tester shall be placed on a form that can be purchased by the tester from the city for an established fee.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-172. Thermal expansion.

It is the responsibility of any person who owns or controls property to eliminate the possibility of thermal expansion if a closed system has been created by the installation of a backflow assembly.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-173. Pressure loss.

Any reduction in water pressure caused by the installation of a backflow assembly is not the responsibility of the city.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-174. Residential service connections.

Any person who owns or controls any residential property which has been determined to have an actual or potential cross-connection will be required to eliminate the actual or potential cross-connection or have an approved backflow assembly installed in accordance with this article.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-175. Responsibility of property owner or controller.

Any person who owns or controls property is responsible for the installation, testing and repair of all backflow assemblies on their property.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-176. Customer service inspection.

(a) Pursuant to TNRCC water system regulations, a customer service inspection for cross-connection control shall be completed by the regulatory authority prior to providing continuous water service in each of the following circumstances:

(1) Water service to a newly constructed facility or previously nonexisting premises.

(2) After any material improvement to buildings or premises.

(3) Any correction or addition to the plumbing of any facility or premises served by the city.

(4) The regulatory authority deems it necessary.

Permanent water service shall not be supplied to a new construction facility(ies) until after the customer service inspection is completed.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-177. Installation requirements for backflow prevention assemblies.

(a) *General.* To ensure proper operation and accessibility of all backflow prevention assemblies, the following requirements shall apply to the installation of these assemblies:

(1) Backflow prevention assemblies shall be installed in accordance with the current TNRCC rules and these regulations. The assembly installer must obtain the required plumbing permits and have the installation inspected by a representative of the regulatory authority.

(2) At those facilities where the regulatory authority requires a backflow prevention assembly be installed at the point of delivery of the water supply, such installation of the assembly must be before any branch in the line and on private property located just inside the boundary between the city right-of-way and the landowner's property. The regulatory authority may specify other areas for installation of the assembly. Assemblies that must be installed or are located on city right-of way are the responsibilities of the business or entity that the water line is serving.

(3) The assembly must be protected from freezing and other severe weather conditions.

(4) All backflow prevention assemblies shall be of a type and model approved by the regulatory authority.

(5) All vertical installations of backflow assemblies must have prior approval by the regulatory authority.

(6) Assemblies that are larger than four (4) inches and installed more than five (5) feet above the floor level must have a suitable platform for use by testing or maintenance personnel.

(7) Bypass lines are prohibited. Pipe fittings which could be used for connecting a bypass line must not be installed.

(8) Premises where an uninterrupted water supply is critical should be provided with two (2) assemblies installed in parallel. They should be sized in such a manner that either assembly will provide the maximum flow required.

(9) Lines should be thoroughly flushed prior to installation. A strainer with blowout tapping may be required ahead of the assembly.

(10) All facilities that require continuous, uninterrupted water service and are required to have a backflow assembly must make provisions for the parallel installation of assemblies of the same type so that testing, repair, and maintenance can be performed.

(11) The property owner assumes all responsibility for any damages resulting form installation, operation, and/or maintenance of a backflow assembly. The owner shall be responsible for keeping all backflow prevention assembly vaults [valves] reasonably free of silt and debris.

(12) Upon completion of installation, the regulatory authority shall be notified and all assemblies must be inspected and tested. All assemblies must be registered with the regulatory authority and shall provide the date of installation, manufacturer, model, type, size, serial number of the backflow assembly, and initial test report.

(b) *Reduced pressure principle backflow prevention assemblies (RPs).* [RPs] may be utilized at premises where a substance is handled that would be hazardous to health if introduced into the potable water system. The RP is normally used in locations where an air gap is impractical. The RP is effective against both backsiphonage and backpressure.

(1) RPs must be sized to provide an adequate supply of water and pressure for the premises being served. Flow characteristics are not standard. Consult manufacturer's specification s for specific performance data.

(2) The assembly must be readily accessible for testing and maintenance and must be located in an area where water damage to building or furnishing would not occur form relief valve discharge. The property owner assumes all responsibility for any damage caused by water discharge from an RP assembly. An approved air gap shall be located at the relief valve orifice of RP assemblies. This air gap shall be at least twice the inside diameter of the incoming supply line as measure vertically above the top rim of the drain, and in no case less that one (1) inch. An approved air-gap funnel assembly may be used to direct minor discharges away from the assembly; this assembly will not control flow in a continuous relief situation. Drain lines to accommodate full relief valve discharge flow should be considered.

(3) No part of a reduced pressure principle backflow prevention assembly shall be submerged in water or installed in a location subject to flooding. RPs are typically installed above grade in well-drained areas, but may be installed below grade (ground level) if a boresight drain to daylight is provided. The drain shall be of adequate capacity to carry the full rated flow of the assembly and shall be screened on both ends.

(4) Enclosures shall be designed for ready access and sized to allow for the minimum clearances established below. Removable protective enclosures are typically installed on the smaller assemblies. Daylight drain ports must be

provided to accommodate full pressure discharge from the assembly.

(5) Assemblies two (2) inches and smaller shall have at least six (6) inches' clearance on both sides and on top of the assembly, and twelve (12) inches below and behind the assembly. All assemblies larger than two (2) inches shall have a minimum of twelve (12) inches on the back side, twenty-four (24) inches on the test cock side, and the relief valve opening shall be at least twelve (12) inches plus nominal size of assembly above the floor or highest possible water level. Headroom of six (6) feet zero (0) inches is required in vaults without a fully removable top. A minimum access opening of thirty-six (36) inches is required on all vaults lids.

(6) Vertical installation is prohibited.

(7) Assemblies must be tested in accordance with this article. Tests are the responsibility of the assembly owner. The owner must notify the regulatory authority upon installation of any backflow prevention assembly.

(8) Variances from these specifications will be evaluated on a case-by-case basis. Any deviations must have a prior written approval of the regulatory authority.

(c) R*educed pressure principle detector backflow prevention assemblies (RPDAs).* [RPDAs] may be utilized in all installations requiring a reduced pressure principle backflow prevention assembly and detector metering.

(1) RPDAs shall comply with the installation requirements applicable for reduced pressure principle backflow assemblies (RPs).

(2) The line-size RP assembly and the bypass RP assembly must each be tested. A separate test report for each assembly must be completed by the certified tester.

(d) *Double check valve backflow prevention assemblies (DCs).* [DCs] may be utilized at premises where a substance is handled that would be objectionable but not hazardous to health if introduced into the potable water system.

(1) DCs must be sized to provide an adequate supply of water and pressure for the premises being served. Consult manufacturer's specifications for specific performance data.

(2) Premises where an uninterrupted water supply is critical should be provided with two (2) assemblies installed in parallel. Assemblies should be size din such a manner that either assembly will provide the minimum water requirements which the two (2) together will provide the maximum flow required.

(3) The assembly shall be readily accessible with adequate room for testing and maintenance. DCs may be installed below grade, providing all test cocks are fitted with brass pipe plugs. All vaults shall be well-drained, constructed of suitable materials, and sized to allow for the minimum clearances established

below.

(4) Assemblies two (2) inches and smaller shall have at least six (6) inches' clearance below and on both sides of the assembly and, if located in a vault, the bottom of the assembly shall be not more than twenty-four (24) inches below grade. All assemblies larger than two (2) inches shall have a minimum clearance of twelve (12) inches on the back side, twenty-four (24) inches on the test cock side, and twelve (12) inches below the assembly. Headroom of six (6) feet zero (0) inches is required in vaults without a fully removable top. A minimum access opening of thirty-six (36) inches is required on all vault lids. "Y" pattern double check valve assemblies shall be installed so that the checks are horizontal and the test cocks face upward. These clearance standards apply to all assemblies installed in vaults, enclosures, and meter boxes.

(5) Vertical installations of DCs are allowed only on sizes up top and including four (4) inches that meet the following requirements:

a. Internally spring-loaded check valves;

b. Flow is upward through assembly;

c. Manufacturer states their assembly can be used in a vertical position;

d. Approved by director.

(6) All DCs must be tested in accordance with this article. Tests are the responsibility of the assembly owner. The owner must notify the regulatory authority upon installation of any backflow prevention assembly.

(7) Variances from these specifications will be evaluated on a case-by-case basis. Any deviations must have prior written approval of the regulatory authority.

(e) *Double check detector backflow prevention assemblies (DCDAs).* [DCDAs] may be utilized in all installations requiring a double check valve assembly and detector metering.

(1) DCDAs shall comply with the installation requirements applicable for double check valve assemblies (DCs).

(2) The line-size DC assembly and the bypass DC assembly must each be tested. A separate test report for each assembly must be completed by the certified tester.

(f) *Pressure vacuum breaker backflow prevention assemblies (PVBs).* [PVBs] may be utilized at point-of-use protection only and where a substance is handled that would be objectionable but not hazardous to health if introduced into the potable water system. PVBs protect against backsiphonage only and shall not be installed where there is potential for backpressure.

(1) The assembly shall be installed a minimum of twelve (12) inches above the

highest downstream piping.

(2) PVBs shall not be installed in an area subject to flooding or where damage would occur from water discharge.

(3) The assembly shall be readily accessible for testing and maintenance, with a minimum clearance of twelve (12) inches all around the assembly.

(4) All PVBs must be tested in compliance with this article. Tests are the responsibility of the assembly owner. The owner must notify the regulatory authority [of] installation of any backflow prevention assembly.

(5) Variances from these specifications will be evaluated on a case-by-case basis. Any deviations must have prior written approval of the regulatory authority.

(c) *Spill-resistant pressure vacuum breaker backflow prevention assemblies (SVBs).* [SVBs] may be utilized in all installations requiring a pressure vacuum breaker. SVBs shall comply with the installation requirements applicable for pressure vacuum breaker backflow prevention assemblies.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-178. Air-gap separation.

Air-gap separations provide maximum protection from backflow hazards and may be utilized at premises where a substance is handled that would be hazardous to health if introduced into the potable water system.

(1) An air-gap separation shall be at least twice the diameter of the supply pipeline measured vertically above the top rim of the receiving vessel, and in no case less than one (1) inch. If splashing is a problem, tubular screens may be attached or the supply line may be cut at a forty-five-degree angle. The air gap distance is measured from the bottom of the angle. Hoses are not allowed.

(2) Air-gap separations shall not be altered in any way without prior approval from the regulatory authority and must be available for inspection at all reasonable times.

(3) Side walls, ribs or similar obstructions do not affect air gaps when spaced from the inside edge of the spout opening a distance greater than three (3) times the diameter of the effective opening for a single, or a distance greater than four (4) times the effective opening for two (2) intersecting walls.

(4) Side walls, ribs or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in subsection (3) above. The effect of three (3) or more such side walls or ribs has not been determined. In such cases, the air gap shall be measured from the top of the wall.

(5) The effective opening shall be the minimum cross-sectional area at the seat of

the control valve or the supply pipe or tubing which feeds the assembly or outlet. If two (2) or more lines supply one (1) outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-179. Fire systems.

(a) An approved double check detector backflow prevention assembly (DCDA) or reduced pressure detector assemblies (RPDAs) shall be the minimum protection for fire sprinkler systems using piping material that is not approved for potable water use and/or that does not provide for periodic flow-through during each twenty-four-hour period, unless a variance has been issued in writing from the regulatory authority. An RPDA must be installed if any solution other than the potable water can be introduced into the sprinkler system.

(b) It is the responsibility of all property owners and persons in charge of any premises to abide by the conditions of this article. In the event of any changes to the plumbing system, it is the responsibility of the property owners to notify the regulatory authority. All costs associated with this article and the purchase, installation, testing and repair of RPDA devices is the responsibility of the property owner and persons in charge of any premises.

(c) Upon the approved installation of the RPDA or approved device, a cross-connection test report completed by a licensed fireline tested must be sent to the attention of the regulatory authority or his representative and include the information required by this article.

(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-180. Responsibilities.

(a) *Property owner.* It is the responsibility of all property owners and/or persons in charge of any premises to abide by the conditions of this article. In the event of any changes to the plumbing system, it is the responsibility of the property owners and/or persons in charge of any premises' responsibility to comply with the following:

(1) Payment of all costs associated with this article and the purchase, installation, testing and repair of backflow prevention assemblies.

(2) Install and maintain all backflow prevention assemblies in accordance with this article and acceptable industry practice.

(3) All commercial establishments shall cause to have all backflow prevention assemblies on their premises tested annually. Such testing must be conducted by a certified cross-connection tester who is registered with the city.

(4) Maintain all backflow prevention assemblies in proper working order at all times, including repair as required.

(5) Maintain all backflow prevention assemblies in a manner which allow them to be tested by a method that has been approved by the regulatory authority.

(6) All records related to backflow prevention assembly installation, testing, and repair shall be maintained on the premises for a minimum of three (3) years.

(b) *Certified backflow prevention assembly tester.* A certified backflow prevention assembly tester shall comply with the following requirements:

(1) Annually register with the regulatory authority and pay the required fee.

(2) Maintain testing equipment improper working condition/calibration.

(3) Maintain the design or operation characteristics of an assembly.

(4) Ensure that devices are tested according to accepted industry practice and TNRCC regulations.

(5) Enter required testing data, including test gauge serial numbers, on cross-connection test forms obtained from the regulatory authority.

(6) Report test results to the regulatory authority within thirty (30) days of testing.

(7) Provide a copy of the completed test report to the property owners and/or persons in charge of any premises.

(8) Maintain testing and/or repair records for a minimum of three (3) years.

(c) *Regulatory authority.* The regulatory authority shall have the authority and responsibility to enforce the provisions of this article and the state statutes, when applicable, regarding cross-connections. The regulatory authority shall inspect and initially test, or cause to be tested, all backflow prevention assemblies installed pursuant to the requirements of this article. For new facilities, permanent water service shall not be provided until all backflow prevention assemblies have been tested and are operational. Except in cases where the testing of backflow prevention assemblies must be delayed until the installation of internal production or auxiliary equipment, the regulatory authority shall not approve a certificate of occupancy until all backflow prevention assemblies have been tested and are operational. The city shall not be liable for damage caused to any backflow prevention assembly as a result of the inspection or testing.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-181. Backflow prevention assembly tester certification–Registration required.

To be an approved backflow prevention assembly tester within the city, an individual must register annually with the regulatory authority, provide proof of TNRCC certification, provide proof that testing equipment is able to maintain a calibration of plus

or minimum 0.2 psid accuracy and pay an annual, nonrefundable tester registration fee of one hundred dollars ($100.00). The regulatory authority will maintain a current list of licensed testers which will be made available to facilities which may need testers to perform their annual testing.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-182. Same–Fees.

(a) There shall be an annual nonrefundable registration fee for each nonresidential backflow prevention assembly device. The registration fee to be charged for a backflow prevention assembly shall be thrity-five dollars ($35.00) per each separate device. This fee may appear on a monthly water/sewer bills and related solely to the matters covered in this article and are separate from other fees chargeable by the city.

(b) There shall be a testing fee of one hundred dollars ($100.00) per each separate backflow prevention assembly on which the regulatory authority performs a test. This fee applies to, but is not limited to, all newly installed backflow devices. If, upon inspection or testing of a newly installed backflow prevention assembly it is deemed not working properly, it is the responsibility of the property owners and/or persons in charge of any premises to make necessary repairs. A retest fee of fifty dollars ($50.00) will be assessed for each retest performed by the regulatory authority.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-183. Lawn irrigation system installations.

All commercial and residential lawn irrigation system installations shall obtain a permit issued by the building inspection department for such installations. The installation requirements must comply with guidelines for the appropriate device found in this article. Interconnections of the potable water supply with an alternate water source is prohibited. Appropriate backflow protection devices must be installed if any mechanical injection stations are used with the irrigation system.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-184. Connection of mobile units.

The connection of a mobile unit to any potable water system is prohibited unless such connection is protected by an air gap or an approved backflow prevention assembly. Prior approval and annual device testing of any backflow prevention assembly must be received from the regulatory authority before connection to any potable water system. Testing fees shall be assessed as required in section 13-182.
(Ord. No. 5649, § 1, 9-3-96)

Sec. 13-185. Enforcement.

(a) *Violations.*

(1) A person commits an offense if he fails to maintain backflow prevention

assemblies in compliance with this section.

(2) A person commits an offense if he fails to comply with the repair order issued by the regulatory authority.

(3) A person commits an offense if backflow from premises he owns, operates, or manages enters the public water supply system.

(4) A person commits an offense if he fails to pay any fees required by this article.

(5) A person commits an offense if he violates any section of this article.

(6) A person commits an offense if he reinstates water service to premises discontinued or disconnected under this article, except as directed by the regulatory authority.

(7) A person in charge of any facility commits an offense if he allows an unregistered tester to perform testing work at their establishment.

(8) A person commits an offense if he tests a backflow prevention assembly within the city without being registered with the regulatory authority.

(9) A person commits an offense if he tests a backflow prevention assembly within the city without being certified by the TNRCC.

(b) *Penalty for violations; other remedies.*

(1) A person who violates any provision of this article is guilty of a misdemeanor and, upon conviction, is punishable by a fine as provided in section 1-8 for violations of public health for each act of violation and for each day of violation.

(2) In addition to proceeding under the authority of subsection (a) of this section, the city is entitled to pursue all other criminal and civil remedies to which is entitled under authority of statutes or other ordinances against a person committing animal control violations.

(c) *Sanctions for failure to pay bill.* In addition to sanctions provided for by this article, the city is entitled to exercise sanctions provided for by other ordinances of the city for failure to pay the bill for water and sanitary sewer services when due.

(d) *Revocation of certified tester's registration.* A certified tester's registration may be reviewed and revoked by the city if the regulatory authority determines that the tester:

(1) Has falsely, incompletely, or inaccurately reported assembly reports;

(2) Has used inaccurate gauges;

(3) Has used improper testing procedures; or

(e) Has created a threat to public health or the environment.
(Ord. No. 5649, § 1, 9-3-96)