

**ORDINANCE   1249**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LLANO, TEXAS AMENDING CODE OF ORDINANCES; Chapter 102 UTILITIES; ARTICLE III. - WATER; DIVISION 4. CROSS-CONNECTIONS AND BACKFLOW PREVENTION; GENERAL POLICY FOR THE CONTROL OF BACKFLOW AND CROSS CONNECTIONS TO THE PUBLIC WATER SYSTEM. AMENDING DEFINITONS AND REQUIREMENTS; REPEALING ALL ORDINANCES, PARTS OF ORDINANCES, OR RESOLUTIONS IN CONFLICT; AND SETTING PENALTIES FOR THE VIOLATION OF THE PROVISION OF THIS ORDINANCE.**

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LLANO, TEXAS:**

**SECTION 1. CROSS-CONNECTION CONTROL – GENERAL POLICY**

**1.1 Purpose**

The purpose of this ordinance is:

- 1.1.1 To protect the public potable water supply of City of Llano, Llano County, Texas, from the possibility of contamination or pollution by isolating within the customer’s internal distribution system(s) or the customer’s private water system(s) such contaminants or pollutants that could backflow into the public water system; and,
- 1.1.2 To promote the elimination or control of existing cross connections, actual or potential, between the customer’s in-plant potable water system(s) and non-potable water systems, plumbing fixtures, and industrial piping systems; and,
- 1.1.3 To provide for the maintenance of a continuing program of cross-connection control that will systematically and effectively prevent the contamination or pollution of all potable water systems.

**1.2 Responsibility**

The Director of Public Works or his designee, Inspector, or Utilities Director or his or her agent shall be responsible for the enforcement of these regulations governing the protection of the public potable water distribution system from contamination or pollution due to the backflow of contaminants or pollutants through the water service connection. If, in the judgment of said enforcing official; an approved backflow-prevention assembly is required (at the customer’s water service connection; or, within the customer’s private water system) for the safety of the water system, the enforcing official shall give notice in writing to said customer to install such an approved backflow-prevention assembly(s) at specific locations(s) on his/her premises in a reasonable determent time. The customer shall immediately install such approved assembly(s) at his/her own expense; and, failure, refusal, or inability on the part of the customer to install, have tested, and maintain said assembly(s) shall constitute grounds for discontinuing water service to the premises until such requirements have been satisfactorily met.

## SECTION 2. DEFINITIONS

- 2.1 Approved – Accepted by the authority responsible as meeting an applicable specification stated or cited in this ordinance or as suitable for the proposed use.
- 2.2 Auxiliary Water Supply – Any water supply on or available to the premises other than the purveyor's approved public water supply. These auxiliary waters may include water from another purveyor's public potable water supply or any natural source(s), such as a well, spring, river, stream, harbor, and so forth; used waters; or industrial fluids. These waters may be contaminated or polluted, or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.
- 2.3 Backflow – The undesirable reversal of flow in a potable water distribution system as a result of a cross connection.
- 2.4 Backpressure – A pressure, higher than the supply pressure, caused by a pump, elevated tank, boiler, or any other means that may cause backflow.
- 2.5 Backsiphonage – Backflow caused by negative or reduced pressure in the supply piping.
- 2.6 Backflow Preventer – An assembly or means designed to prevent backflow.
- 2.7 Air gap. The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture, receptor, or other assembly and the flood level rim of the receptacle. These vertical, physical separations must be at least twice the diameter of the water supply outlet, never less than 1 in. (25mm.).
- 2.8 Reduced-pressure backflow-prevention assembly. The approved reduced-pressure principle backflow-prevention assembly consists of two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and below the first check valve. These units are located between two tightly closing resilient-seated shutoff valves as an assembly and equipped with properly located resilient-seated test cocks.
- 2.9 Double check valve assembly. The approved double check valve assembly consists of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves and fittings with properly located resilient-seated test cocks. This assembly shall only be used to protect against a nonhealth hazard (that is, a pollutant).
- 2.10 City - The City of Llano, Texas
- 2.11 Contamination – An impairment of a potable water supply by the introduction or admission of any foreign substance that degrades the quality and creates a health hazard.
- 2.12 Cross Connection – A connection or potential connection between any part of a potable water system and any other environment containing other substances in a manner that, under any circumstances would allow such substances to enter the potable water system. Other substances may be gases, liquids, or solids, such as chemicals, waste products, steam, water from other sources (potable or non-potable), or any matter that may change the color or add odor to the water.

- 2.13 Cross Connections-Controlled – A connection between a potable water system and a non-potable water system with an approved backflow-prevention assembly properly installed and maintained so that it will continuously afford the protection commensurate with the degree of hazard.
- 2.14 Cross-Connection Control by Containment – The installation of an approved backflow-prevention assembly at the water service connection to any customer’s premises, where it is physically and economically unfeasible to find and permanently eliminate or control all actual or potential cross connections within the customer’s water system; or it shall mean the installation of an approved backflow-prevention assembly on the service line leading to and supplying a portion of a customer’s water system where there are actual or potential cross connections that cannot be effectively eliminated or controlled at the point of the cross connection.
- 2.15 Enforcing Official– The Enforcing Official or his designee, Inspector, or Utilities Director or his or her agent for the City of Llano.
- 2.16 Hazard, Degree of – The term is derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water system.
- 2.17 Hazard-Health. A cross connection or potential cross connection involving any substance that could, if introduced in the potable water supply, cause death, illness, spread disease, or have a high probability of causing such effects
- 2.18 Hazard-plumbing. A plumbing-type cross connection in a consumer’s potable water system that has not been properly protected by an approved air gap or an approved backflow-prevention assembly.
- 2.19 Hazard-non-health. A cross connection or potential cross connection involving any substance that generally would not be a health hazard but would constitute a nuisance or be aesthetically objectionable, if introduced into the potable water supply.
- 2.20 Hazard-system. An actual or potential threat of sever damage to the physical properties of the public potable water system or the consumer’s potable water system or of a pollution or contamination that would have a protracted effect on the quality of the potable water in the system.
- 2.21 Industrial Fluids System - Any system containing a fluid or solution that may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration, such as would constitute a health, system, pollution, or plumbing hazard, if introduced into an approved water supply. This may include, but not be limited to: polluted or contaminated waters; all types of process waters and used waters originating from the public potable water system that may have deteriorated in sanitary quality; chemicals in fluid form; plating acids and alkalies; circulating cooling waters connected to an open cooling tower; and/or cooling towers that are chemically or biologically treated or stabilized with toxic substances; contaminated natural waters, such as wells, springs, streams, rivers, bays, harbors, seas, irrigation canals or systems, and so forth; oils, gases, glycerin, paraffins, caustic and acid solutions, and other liquid and gaseous fluids used in industrial or other purposes for fire-fighting purposes.
- 2.22 Pollution – The presence of any foreign substance in water that tends to degrade its quality so as to constitute a nonhealth hazard or impair the usefulness of the water.

- 2.23 Water-Potable – Water that is safe for human consumption as described by the public health authority having jurisdiction.
- 2.24 Water-Non-potable – Water that is not safe for human consumption or that is of questionable quality.
- 2.25 Service Connection – The terminal end of a service connection from the public potable water system, that is, where the water purveyor loses jurisdiction and sanitary control over the water at its point of delivery to the customer’s water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. There should be no unprotected takeoffs from the service line ahead of any meter or backflow-prevention assembly located at the point of delivery to the customer’s water system. Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.
- 2.26 Water-Used – Any water supplied by a water purveyor from a public potable water system to a consumer’s water system after it has passed through the point of delivery and is no longer under the sanitary control of the water purveyor.
- 2.27 PRBA- Reduced-pressure Principle Backflow prevention Assembly

### **SECTION 3. REQUIREMENTS**

#### **3.1 Water System**

- 3.1 The water system shall be considered as made up of two parts: the utility system and the customer system.
- 3.2 Utility system shall consist of the source facilities and the distribution system, and shall include all those facilities of the water system under the complete control of the utility, up to the point where the customer’s system begins.
- 3.3 The source shall include all components of the facilities utilized in the production, treatment, storage, and delivery of water to the distribution system.
- 3.4 The distribution system shall include the network of conduits used for the delivery of water from the source to the customer’s system.
- 3.5 The customer’s system shall include those parts of the facilities beyond the termination of the utility distribution system that are utilized in conveying utility-delivered domestic water to points of use.

#### **3.6 Policy**

- 3.6.1 No water service connection to any premises shall be installed or maintained by the water purveyor unless the water supply is protected as required by federal and state laws and regulations and this ordinance. Service of water to any premises shall be discontinued by the water purveyor if a backflow prevention assembly required by this ordinance is not installed, tested, and maintained, or if it is found that a backflow-prevention assembly

has been removed, bypassed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.

- 3.6.2 The customer's system should be open for inspection at all reasonable times to the enforcing official to determine whether cross connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the enforcing official shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with federal and state laws and all applicable to city ordinances relating to plumbing and water supplies and the regulations adopted pursuant thereto.
- 3.6.3 An approved backflow-prevention assembly shall be installed on each service line to a customer's water system at or near the property line or immediately inside the building or improvement being served; but in all cases, before the first branch line leading off the service line wherever the following conditions exist:
  - 3.2.3a. In the case of premises having an auxiliary water supply, the public water system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line, appropriate to the degree of hazard.
  - 3.2.3b. In the case of premises on which any industrial fluids or any other objectionable substances are handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line, appropriate to the degree of hazard. This shall include the handling of process waters and waters originating from the utility system that have been subject to deterioration in quality.
  - 3.2.3c. In the case of premises having (1) internal cross connections that cannot be permanently corrected and controlled, or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross connections exist, the public water system shall be protected against backflow from the premises by installing an approved backflow-prevention assembly in the service line.
- 3.2.4. The type of protective assembly required under subsections 3.2.3a, 3.2.3b, and 3.2.3c shall depend upon the degree of hazard that exists as follows:
  - 3.2.4a. In the case of any premises where there is an auxiliary water supply as stated in subsection 3.2.3a of this section, and it is not subject to any of the following rules, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle\backflow-prevention assembly.
  - 3.2.4b. In the case of any premises where there is water or substance that would be objectionable but no hazardous to health, if introduced

- into the public water system, the public water system shall be protected by an approved RPBA.
- 3.2.4c. In the case of any premises where there is any material dangerous to health that is handled in such a fashion as to create an actual or potential hazard to the public water system, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly. Examples of premises where these conditions will exist include, but are not limited to, sewage treatment plants, sewage pumping stations, chemical manufacturing plants, hospitals, mortuaries, and planting plants.
- 3.2.4d. In the case of any premises where there are “uncontrolled” cross connections, either actual or potential, the public water system shall be protected by an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly at the service connection.
- 3.2.4e. In the case of any premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete in-plant cross-connection survey, the public water system shall be protected against backflow from the premises by either an approved air-gap separation or an approved reduced-pressure principle backflow-prevention assembly on each service to the premises.
- 3.2.4f. In the case of any premises where, in the opinion of the Enforcing Officer, an undue health threat is posed because of the presence of extremely toxic substances, the Enforcing Official may require an air gap at the service connection to protect the public water system. This requirement will be at the direction of the Enforcing Officer and is dependent on the degree of hazard.
- 3.2.4g. In a case of any premises where any other hazard listed on the chart in 30 TAC 290.47(i), a minimum of a RPBA will be required by the City of Llano.
- 3.2.5 Any backflow-prevention assembly required herein shall be a model and size approved by the Enforcing Official. The term approved backflow-prevention assembly shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association titled:  
AWWA C510-89-Standard for Double Check Valve Backflow-Prevention Assembly, and  
AWWA C511-89-Standard for Reduced-Pressure Principle Backflow-Prevention Assembly,  
and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research of the  
University of Southern California established by  
“Specification of Backflow-Prevention Assemblies”-  
Sec. 10 of the most current issue of the Manual of

### Cross-Connection Control.

Said AWWA and FCCHR standards and specifications are hereby adopted by the City of Llano, Texas. Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with said AWWA standards and FCCHR specifications.

The following testing laboratory has been qualified by the Director of Public Works to test and certify backflow preventers:

Foundation for Cross-Connection Control and Hydraulic  
Research

University of southern California

University Park

Los Angeles, CA 90089

Testing laboratories, other than the laboratory listed above, will be added to an approved list as they are qualified by the Enforcing Official. Backflow preventers that may be subjected to backpressure or back siphonage that have been fully tested and have been granted a certificate of approval by said qualified laboratory and are listed on the laboratory's current list of approved backflow-prevention assemblies may be used without further testing or qualification.

- 3.2.6 The City of Llano will have all backflow-prevention assemblies inspected at least once per year at the customers' expense, except for on fire service lines. The fee will be billed to the customer on their regular utility bill. In those instances where the enforcing official deems the hazard to be great enough, certified inspections may be required at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by the assembly manufacturer's representative, Public Works personnel, or by a certified tester approved by the enforcing official. These assemblies shall be repaired, overhauled, or replaced at the expense of the customer-user whenever said assemblies are found to be defective. If an assembly is found to be in need of repair by the certified inspector then water service will be disconnected until the device is back in compliance. It is the responsibility of the customer to make sure the backflow device is easily accessible for testing. Records of such tests, repairs, and overhaul shall be kept and a copy submitted to city hall. It will be the responsibility of a fire service customer to have their assembly tested annually by the appropriate tester and submit the original City of Llano testing form to City Hall annually.
- 3.2.7 All presently installed backflow-prevention assemblies that do not meet the requirements of this section but were approved assemblies for the purpose described herein at the time of installation and that have been properly maintained, shall, except for the inspection and maintenance requirements under subsection 3.2.6, be excluded from the requirements of these rules so long as

the enforcing official is assured that they will satisfactorily protect the utility system. Whenever the existing assembly is moved from the present location, requires more than minimum maintenance, when a DVCA (double check valve backflow prevention assembly) fails testing, or when the enforcing official finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved with approved PRBA.

#### **SECTION 4. CUSTOMER SERVICE INSPECTIONS**

4.1 A customer service inspection shall be completed prior to providing continuous waster service to all new construction, on any existing service when the water purveyor has reason to believe that cross-connections or other contaminant hazards exist, or after any material improvement, correction, or addition to the private water distribution facilities.

4.2 Only individuals with the following credentials shall be recognized as capable of conducting a customer service inspection:

4.2a. Plumbing Inspectors and Water Supply Protection Specialists that have been licensed by the Texas Board of Plumbing Examiners.

4.2b. Customer Service Inspectors that have been licensed by the Texas Commission on Environmental Quality (TCEQ).

4.3 The Customer Service Inspection must certify that:

4.3a. No direct connection between the public drinking water supply and a potential source of contamination is permitted. Potential sources of contamination shall be isolated from the public water system by a properly installed air gap or an appropriate backflow prevention assembly.

4.3b. No cross-connection between the public water supply and a private water source exists. Where an actual properly installed air gap is not maintained between the public water supply and a private water supply, and approved reduced pressure-zone backflow prevention assembly is properly installed and a service agreement exists for annual inspection and testing by a recognized backflow prevention assembly tester.

4.3c. No connection exists which allows water to be returned to the public drinking water supply is permitted.

4.3d. No pipe or pipe fitting which contains more than 8% lead may be used for the installation or repair of plumbing at any connection that provides water for human use.

4.3e. No solder of flux which contains more than 0.2% lead can be used for the installation or repair of plumbing at any connection that provides water for human use. A minimum of one lead test shall be performed for each inspection.

#### **SECTION 5. PENALTY**

5.1 Any person, firm, corporation or other legal entity violating the provisions of this ordinance shall be guilty of a misdemeanor and shall be fined up to two thousand dollars (\$2000.00) for each offense. Each day a violation continues to exist shall constitute a separate offense.

**SECTION 6. REPEALER AND SEVERABILITY**

6.1 All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

6.2 The invalidity of any section or provision of this ordinance shall not invalidate other sections or provisions thereof.

PASSED AND APPROVED THIS THE 23<sup>rd</sup> day of August, 2013.



Mike Virdell  
Mayor Mike Virdell

ATTEST:

Toni Milam  
Toni Milam, City Secretary