

CROSS CONNECTION CONTROL

ORDINANCE NO. 35

BE IT ORDAINED BY THE GOVERNING BOARD OF PUBLIC WATER SUPPLY DISTRICT NO. 3, COUNTY OF JEFFERSON, STATE OF MISSOURI:

SECTION I - INTRODUCTION

- a. Purpose. Under the authority granted by Missouri Revised Statute §640.100 (1978), the Missouri Department of Natural Resources has adopted certain Regulations for the prevention of backflow which are found at 10 C.S.R. 60-11.010. It is the intent of this Ordinance to adopt these Regulations in their entirety such that the requirements hereunder will be neither less nor more stringent than such Regulations. Accordingly, the purpose of this Ordinance, as is the purpose of such Regulations, is to establish requirements for the protection of public water systems from the introduction of contaminants by backflow.
- b. Application. This Ordinance shall apply to all customers served by the public potable water system of Public Water Supply District No. 3.
- c. Definitions. The definitions listed in Appendix A are taken from 10 C.S.R. 60-2.015 and shall apply in the interpretation and enforcement of this Ordinance.

SECTION II - CROSS CONNECTIONS PROHIBITED

No customer shall cause or allow the construction or maintenance of an unprotected cross connection.

SECTION III - BACKFLOW CONTROL BY CONTAINMENT

- a. Class I backflow hazards. The customer or the customer's authorized representative shall construct or install a department-approved air-gap separation or reduced pressure principle backflow prevention assembly on the customer service line, in accordance with Section IV when --
 1. Public Water Supply District No. 3 or the local governmental agency (if one exists) requires protection from an actual or potential class I backflow hazard at any facility;
 2. Modification is made to the customer water system at an existing facility, which is designated an actual or potential backflow hazard by subsection III(b). If an addition or modification requiring a separate customer

service line is made to an existing facility, the new service line as well as the existing customer service line shall be equipped with department-approved backflow prevention assemblies;

3. A new customer service line connection is made to a facility which is considered an actual or potential backflow hazard by subsection III(b); or
 4. A backflow incident occurs which introduces a contaminant into the public or customer water system which may create a health hazard.
- b. The following is a list of facilities, not all inclusive, considered to be actual or potential class I backflow hazards:
1. Aircraft and missile manufacturing plants;
 2. Automotive plants including those plants which manufacture motorcycles, automobiles, trucks, recreational vehicles and construction and agricultural equipment;
 3. Potable water dispensing stations which are served by a public water system;
 4. Beverage bottling plants including dairies and breweries;
 5. Canneries, packing houses and reduction plants;
 6. Car washes;
 7. Chemical, biological and radiological laboratories including those in high schools, trade schools, colleges, universities and research institutions;
 8. Hospitals, clinics, medical buildings, autopsy facilities, morgues, mortuaries and other medical facilities;
 9. Metal or plastic manufacturing, fabrication, cleaning, plating or processing facilities;
 10. Plants manufacturing paper and paper products;
 11. Plants manufacturing, refining, compounding or processing fertilizer, film, herbicides, natural or synthetic rubber, pesticides, petroleum or petroleum products, pharmaceuticals, radiological materials or

any chemical which would be a contaminant to the public water system;

12. Commercial facilities that use herbicides, pesticides, fertilizers or any chemical which would be a contaminant to the public water system;
 13. Plants processing, blending or refining animal, vegetable or mineral oils;
 14. Commercial laundries and dye works;
 15. Sewage, storm water and industrial waste treatment plants and pumping stations;
 16. Waterfront facilities including piers, docks, marinas and shipyards;
 17. Industrial facilities which recycle water;
 18. Restricted or classified facilities or other facilities closed to the supplier of water or the department;
 19. Fire sprinkler systems using any chemical additives;
 20. Auxiliary water systems;
 21. Irrigation systems with facilities for injection of pesticides, herbicides or other chemicals or with provisions for creating back pressure;
 22. Portable tanks for transporting water taken from a public water system; and
 23. Facilities which have pumped or repressurized cooling or heating systems that are served by a public water system, including all boiler systems.
- c. Class II backflow hazards. The customer or the customer's authorized representative shall install, as minimum protection for class II backflow hazards, a department-approved double check valve assembly on the customer service line in accordance with paragraphs (b)1., 3., 4., and 5. when --
1. Public Water Supply District No. 3 or the local governmental agency (if one exists) requires protection from an actual or potential class II backflow hazard at any facility;
 2. Modification is made to the customer water system at an existing facility, which is designated an actual or

potential backflow hazard by subsection III(d). If an addition or modification requiring a separate customer service line is made to an existing facility, the new service line, as well as the existing customer service line, shall be equipped with department approved backflow prevention assemblies;

3. A new customer service line connection is made to a facility which is considered an actual or potential backflow hazard by subsection III(d);
 4. A backflow incident occurs which introduces contaminant into the public or customer water system which may create a nuisance, be aesthetically objectionable or cause minor damage to the public or customer water system.
- d. The following is a list of facilities, not all inclusive, considered to be actual or potential class II backflow hazards:
1. Tanks to store water from the public water system for fire fighting only, unless such tanks meet the requirements of the department for construction to maintain bacteriological quality of the water;
 2. Fire sprinkler systems not using chemical additives; or
 3. Cross connections that could permit introduction of contaminants into the public or customer water system and thereby create a nuisance, be aesthetically objectionable or cause minor damage to the public water system or its appurtenances.
- e. Customer facilities not designated a backflow hazard by this Ordinance may be designated a backflow hazard by written notification from Public Water Supply District No. 3 or the department to the customer. The notice shall specify the nature of the customer activity which necessitates designation of the facility as a backflow hazard, the type of backflow protection required and the date by which the customer shall install or construct this assembly on the customer service line to the facility.
- f. The department may issue a letter exempting a customer from the requirements of subsections III(a) and (c) if the customer can show to the satisfaction of the department, the local governmental authority (if one exists) and Public Water Supply District No. 3 that the activities taking place at the customer's facility and the materials used in connection with these activities or stored on the premises

cannot endanger the health of customers or degrade the water quality of the public water system should backflow occur. An exemption shall remain valid for no more than three (3) years following the date of issuance. An exemption shall be void if it is determined that the customer facility has become a backflow hazard.

SECTION IV - STANDARDS OF CONSTRUCTION AND INSTALLATION

- a. Construction. The discharge pipe of an air gap shall terminate a minimum of two (2) pipe diameters of the discharge pipe above the flood level rim of the receiving vessel; in no case shall the distance be less than one inch (1").
- b. Installation.
 1. Only those models of double check valve assemblies and reduced pressure principle backflow prevention assemblies which are on the approved list maintained by the department are acceptable.
 2. Reduced pressure principle backflow prevention assemblies shall be installed with no plug or additional piping affixed to the pressure differential relief valve port and with the pressure differential relief valve port a minimum of twelve inches (12") above floor level. Additionally, the assembly shall be installed at a location where any leakage from the pressure differential relief valve port will be noticed, that allows easy access to the assembly for maintenance and testing and that will not subject the assembly to flooding, excessive heat or freezing.
 3. All double check valve assemblies shall be installed at a location that allows easy access to the assembly for maintenance and testing and that will not subject the assembly to excessive heat or freezing.
 4. It is the basic requirement to have backflow prevention assemblies installed on the customer water system immediately inside the wall where the customer service line enters the building. If it is not possible to install the backflow prevention assembly as described previously, then installation shall be at the approval of the department.
 5. No bypass piping shall be allowed around a backflow prevention assembly unless the bypass is equipped with an identical backflow prevention assembly.

SECTION V. - CUSTOMER RESPONSIBILITIES

- a. The customer shall furnish, install and maintain in working order at all times any backflow prevention assembly required by this rule.
- b. The ensure that each backflow prevention assembly required by this rule is in working order, the customer shall have each assembly inspected and tested by a certified backflow prevention assembly tester at the time of construction or installation, at the following intervals and in the following manner:
 1. Air gaps shall be inspected each year by a date which is no later than thirty (30) days past the anniversary of the original inspection test date to ensure that they continue to meet the requirements of subsection IV(a);
 2. Reduced pressure principle backflow prevention assemblies also shall be tested each year by a date which is no later than thirty (30) days past the anniversary of the original inspection test date to ensure that --
 - A. The pressure differential relief valve operates to maintain the zone between the two (2) check valves at least two pounds per square inch (2.0 psi) less than the supply pressure,
 - B. The #2 check valve is leak tight against reverse flow under all pressure differentials, and
 - C. The static pressure drop across the #1 check valve is at least three pounds per square inch (3.0 psi) greater than the pressure differential between the supply pressure and the pressure in the zone required to open the pressure differential relief valve; and
 3. Double check valve assemblies shall be tested each year by a date which is not later than thirty (30) days past the anniversary of the original inspection test date to ensure that both the #1 and #2 check valves are leak tight against reverse flow under all pressure differentials.
- c. The customer shall permit access to the premises by the certified backflow prevention assembly tester, Public Water Supply District No. 3 and department representatives, at reasonable times and upon presentation of identification,

for inspection of the customer water system or testing of backflow prevention assemblies installed in accordance with this rule.

- d. Those customers granted an exemption in accordance with subsection III(f) of this rule shall report to Public Water Supply District No. 3 any proposed change in process, plumbing or materials used or stored at the exempted facility at least fourteen (14) days prior to making the change. Failure to do so shall void the exemption.

SECTION VI - CERTIFIED BACKFLOW
PREVENTION ASSEMBLY TESTER DUTIES

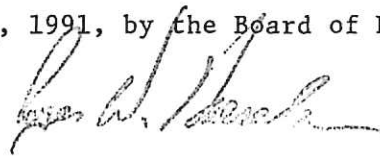
- a. All backflow prevention assembly testers shall be certified through a department-approved program and be listed with the department. All certified backflow prevention assembly testers shall be recertified every three (3) years through a department-approved program. Evidence of recertification must be provided to the department for consideration to be included on a list of certified backflow prevention assembly testers made available to the public.
- b. All certified backflow prevention assembly testers shall report to the appropriate governmental authority (if one exists), to Public Water Supply District No. 3, the customer, and, if requested, the department the results of inspections or tests conducted in compliance with subsection V(b). Reports of tests shall contain the signature of the certified backflow prevention assembly tester, attesting to the compliance of the assembly with established operational requirements. Routine reports shall be submitted within thirty (30) days after making the inspection or test.

SECTION VII - RESPONSIBILITIES OF PUBLIC
WATER SUPPLY DISTRICT NO. 3

- a. Because backflow may cause a health hazard through transmission of contaminants via the public water system, Public Water Supply District No. 3 shall remove the water meter or otherwise sever the public water supply from the customer service line serving a facility when Public Water Supply District No. 3 --
 - 1. Has knowledge that the customer is causing a cross connection;
 - 2. Has knowledge that the customer is failing or refusing to proceed without delay to correct any violation of the provisions of this rule after having been notified to do so;


3. Is so ordered by the appropriate local governmental authority (if one exists); or
 4. Is so ordered by the department because of violation of any provision of this rule by the customer.
- b. Public Water Supply District No. 3 shall retain records of the reports of inspections, tests and repairs on class I and class II devices for a period of five (5) years.
 - c. Public Water Supply District No. 3 may develop, for use within this service area, written procedures to implement the provisions of this rule. In developing such procedures, Public Water Supply District No. 3 will be permitted to take into account existing backflow prevention programs and incorporate ordinances, regulations or requirements of appropriate local governmental authorities.
 - d. Public Water Supply District No. 3 shall make record of the date of the initial inspection or test of class I and class II backflow prevention devices; that date shall become the annual due date for subsequent inspection or test reports submitted by the certified backflow prevention assembly tester. If subsequent reports are not received by Public Water Supply District No. 3 on or before forty-five (45) days following this due date, Public Water Supply District No. 3 shall promptly notify the customer, the local governmental agency (if one exists) and the department.

Adopted this 7th day of August, 1991, by the Board of Directors of Public Water Supply District No. 3.



President

ATTEST:



Clerk

APPENDIX A - Definitions

1. "Auxiliary water system". Any supply or source of water other than the approved public water system.

2. "Backflow". The undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the public water system from any source(s).

3. "Backflow hazard". Any facility which, because of the nature and extent of activities on the premises or the materials used in connection with the activities or stored on the premises, would present an immediate or potential health hazard to customers of the public water system or would threaten to degrade the water quality of the public water system, should backflow occur.

(a) Class I backflow hazard. A backflow hazard which presents an immediate or potential health hazard to customers of the public water system should backflow occur.

(b) Class II backflow hazard. A backflow hazard which would threaten to degrade the water quality of the public water system should backflow occur.

4. "Backflow prevention assembly". An assembly that has been investigated and approved by the department. The approval of backflow prevention assemblies by the department shall be on the basis of a favorable laboratory and field evaluation report by an approved testing laboratory.

(a) "Air-gap separation". A physical separation between the free-flowing discharge end of a public water system pipeline and an open or nonpressurized receiving vessel. An approved air-gap separation shall be at least twice the diameter of the system pipe measured vertically above the overflow rim of the vessel; in no case shall the distance be less than one inch (1");

(b) "Double check valve assembly". An assembly composed of two (2) single, independently acting, internally loaded, approved check valves including tightly closing shut-off valves located at each end of the assembly and fitted with properly located test cocks.

(c) "Reduced pressure principle backflow prevention assembly". A device containing two (2) independently acting, internally loaded, approved check valves together with a hydraulically operating, mechanically independent pressure relief valve located between the check valves and at the same time below the first valve. The unit shall include properly located test cocks and tightly closing shut-off valves at each end of the assembly.

5. "Backflow prevention assembly tester - certified". A person who has proven his/her competency to the satisfaction of the department. Each person who is certified to make competent tests or to repair, overhaul and make reports on backflow prevention assemblies shall be conversant with applicable laws and rules and have had experience in plumbing or pipe fitting or have other qualifications which, in the opinion of the department, are equivalent.
6. "Containment". Protection of the public water system by installation of a department-approved backflow prevention assembly or air-gap separation at the user connection from the main service line(s).
7. "Contaminant". Any physical, chemical, biological or radiological substances or matter in water, including but not limited to, those substances for which maximum contaminant levels are established by the department.
8. "Cross-connection". Any actual or potential connection or structural arrangement between a public water system and any other source or system through which it is possible to introduce into any part of the public water 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.
9. "Customer". Any person who receives water from a public water system.
10. "Customer service line". The pipeline from the public water system to the first tap, fixture, receptacle or other point of customer water use or to the first auxiliary water system or pipeline branch in a building.
11. "Customer water system". All piping, fixtures and appurtenances, including auxiliary water systems, used by a customer to convey water on his/her premises.
12. "Department". Department of Natural Resources of the State of Missouri.
13. "Service connection". Any waterline or pipe connected to a water distribution main or pipe for the purpose of conveying water to a point of use.