

**KING COUNTY WATER DISTRICT NO. 125  
KING COUNTY, WASHINGTON**

**RESOLUTION NO. 95 04 12 - 290**

A RESOLUTION OF KING COUNTY WATER DISTRICT NO. 125, KING COUNTY, WASHINGTON PROHIBITING CROSS-CONNECTIONS WHICH ENDANGER WATER QUALITY AND REQUIRING THE INSTALLATION OF BACKFLOW PREVENTION ASSEMBLIES; ADOPTING STATE STANDARDS FOR CROSS-CONNECTION CONTROL REGULATIONS; DECLARING PROHIBITED CROSS CONNECTIONS TO BE UNLAWFUL; PRESCRIBING A PROCEDURE FOR ABATEMENT OF SAID CROSS-CONNECTIONS; ESTABLISHING REQUIREMENTS FOR DOMESTIC WATER SERVICE FOR BUILDINGS OVER 30 FEET IN HEIGHT; AND ESTABLISHING FEES FOR INSPECTION OF CROSS-CONNECTION ASSEMBLIES.

WHEREAS, the Board of Commissioners of King County Water District No. 125 ("District"), King County, Washington, has determined that certain cross-connections in the District's public water system pose a potential hazard to water quality within the District; and

WHEREAS, Washington Administrative Code 246-290-490 requires the District to develop and implement a cross-connection control program, and it is in the best interest of the District to develop and implement such a program to regulate and prohibit certain cross-connections; and

WHEREAS, the installation of backflow prevention assemblies to prevent back pressure or back siphonage into the public water system is necessary for the public health, welfare, and safety; now, therefore,

BE IT RESOLVED by the Board of Commissioners of King County Water District No. 125 of King County, Washington, as follows:

1. Definitions:

- (a) Air gap separation means the vertical separation between the free flowing discharge end of the potable supply line and the overflow rim of the receiving vessel. This separation must be at least twice the inside diameter of the supply line, but never less than one-inch.
- (b) Auxiliary supply means any water supply, other than the District's water system, that may be available on or to a building or premises.

- (c) Backflow means the flow in the direction opposite the normal flow, or the introduction of any foreign liquids, gases, or substances into the distribution system of a public water system.
- (i) Back pressure means backflow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the District's supply system pressure.
- (ii) Back siphonage means a form of backflow due to a negative or reduced pressure within the District's water system.
- (d) Backflow prevention assembly means an assembly to counteract back pressure or prevent back siphonage. This device must appear on the list of Washington State Department of Health approved devices to counteract back pressure or to prevent back siphonage into the distribution system of a public water supply.
- (e) Cross-Connection means any physical arrangement or potential arrangement whereby the District's water system is connected, directly or indirectly, with any other water system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other assembly which contains, or may contain, contaminated water, sewage or other waste or liquid of unknown or unsafe quality which may be capable of importing contamination to the public water system as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or change-over assemblies, and other temporary or permanent assemblies through which, or because of which, backflow could occur are considered to be cross-connections.
- (f) Double check valve assembly means an approved assembly consisting of two independently operating check valves, loaded to the closed position by springs or weights. The device shall include four properly located test cocks and be installed as a unit with and between two tightly closing, resilient seated shutoff valves. This assembly shall be installed as a unit as furnished by the manufacturer.
- (g) Reduced pressure backflow prevention assembly means an approved assembly consisting of two independently acting spring loaded check valves separated by a spring loaded differential pressure relief valve; two resilient seated shutoff valves, and four properly located, resilient seated test cocks. This assembly shall be installed as a unit furnished by the manufacturer.
- (h) Pressure vacuum breaker means an approved assembly consisting of a spring loaded check valve loaded to the closed position, and an independently operating air inlet valve loaded to the open position. The device shall include properly located test cocks and be installed as a unit with and between two tightly closing, resilient seated shutoff valves as furnished by the manufacturer.

- (i) Atmospheric vacuum breaker means an approved device containing a float check (poppet), a check seat, and an air inlet port. The device allows air to enter the waterline when the line pressure is reduced to a gauge pressure of zero or below.
- 2. Cross-connections declared unlawful. The installation or maintenance of a cross-connection which, in the opinion of the District or any of its designated representatives who are certified as a cross connection control specialist by the State of Washington, may endanger the water quality of the District's potable water supply is prohibited. Any such cross-connection now existing or hereinafter installed is hereby declared unlawful and shall be disconnected and removed immediately or protected by the installation of backflow prevention assembly as required by the District. The most recently published edition of the manual titled "Cross Connection Control Manual", Fifth Edition Pacific Northwest Section, AWWA shall be used as a resource.
- 3. Backflow prevention devices required. Backflow prevention devices are required to be installed at the service connection or within any premises where the District determines that the nature and extent of the activities, or the materials used in connection with the activities on the premises, or materials stored on the premises, would present an immediate and dangerous hazard to health should a cross-connection occur. This shall include, but not be limited to the following situations:
  - a. Premises having an auxiliary water supply.
  - b. Premises having internal cross-connections that are not correctable, or intricate plumbing arrangements which make it impractical to ascertain whether or not a cross-connection exists.
  - c. Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency, or at sufficiently short notice to assure that cross connections do not exist.
  - d. Premises having a repeated history of cross-connections being established or re-established.
  - e. Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.
  - f. Premises where material of a toxic or hazardous nature are handled in a manner that if back siphonage should occur, a serious health hazard may result.
  - g. Any mobile apparatus which uses water from the system, or water from any premises within the system service boundaries.

- h. Premises having an irrigation system.
  - i. Premises having fire service and/or fire sprinkler systems.
4. Types of Facilities requiring backflow device: The following types of facilities will fall into one of the above categories where a backflow prevention device shall be installed, unless the District determines that no hazard exists:
- a. Hospitals, mortuaries, clinics
  - b. Laboratories
  - c. Sewage treatment plants
  - d. Food and beverage processing plants
  - e. Chemical plants using a water process
  - f. Petroleum processing or storage plants
  - g. Process water or cooling towers
  - h. Piers and docks
  - i. Metal plating industry
  - j. Radioactive material processing plants
  - k. Car washing facility
  - l. Other facilities specified by the District or the State Department of Health.
5. Conditions requiring installation or replacement of backflow prevention assemblies. Certain requirements and regulations apply to piping installations or portions thereof that require backflow prevention, except fire sprinkler systems that on February 1, 1992 were not in compliance with "Cross Connection Control Manual", Fifth Edition, AWWA.
- a. Backflow prevention assemblies in service but not currently listed as an approved assembly may remain in service, provided the backflow prevention assemblies 1) were on the current list of approved backflow prevention assemblies at the time of installation; 2) are properly maintained; 3) are of the type appropriate for the degree of hazard; 4) are tested annually and successfully pass.
  - b. Backflow prevention assemblies in service but not currently listed as an approved device shall be replaced by an assembly on the current list of approved assemblies if the not-currently listed assemblies are relocated or require more than minimum maintenance to successfully pass the annual test.
  - c. If a water system protected by a backflow prevention assembly is modified to include components or additives requiring a higher level of protection against backflow, the backflow assembly shall be replaced with an approved assembly appropriate for the degree of hazard.

6. Requirements and regulations for domestic water service for buildings over 30 feet in height and fire sprinkler systems. The following requirements and regulations apply to all fire sprinkler systems which, on February 1, 1992 were not in compliance with the Fifth Edition of AWWA's "Cross-Connection Control Manual".
  - a. The existing domestic and/or fire sprinkler system may remain in service provided none of the following conditions occur:
    1. The plumbing system causes contamination or pollution of any potable water system or violates other drinking water standards currently required by state and federal regulations.
    2. A backflow from the system results in sickness, injury or death.
    3. The existing backflow prevention assembly is relocated.
    4. The plumbing system is modified to include components or additives requiring a higher level of protection against backflow.
    5. The fire sprinkler system is modified.
7. Backflow prevention assembly installation requirements. Backflow prevention assemblies, when required to be installed in the opinion of the District or any of its designated representatives, shall be installed and maintained by the service customer on any service connection to the District's water supply. To ensure proper operation and accessibility of all approved assemblies, the following requirements apply to the installation of these devices:
  - a. No part of the approved assembly shall be submerged under water nor installed on a location subject to flooding. If installed in a vault or basement, adequate drainage shall be provided.
  - b. Approved assemblies intended for isolation of cross-connections must be installed at the point of use. Alternate locations must be approved in writing by the District prior to installation.
  - c. The approved assembly must be protected from freezing and other severe weather conditions.
  - d. All approved assemblies installed shall be of a size, type and model pre-approved by the Washington State Department of Health and the District.

- e. The approved assembly shall be readily accessible with adequate room for maintenance and testing. Approved assemblies 2" and smaller shall have a minimum clearance of 6" on the backside, and 12" on the testcock side of the assembly. Approved assemblies larger than 2" shall have a minimum clearance of 12" on the back side, 24" on the test cock side, 12" plus the nominal size of the assembly below the device, and 36" above the assembly.
  - f. If written permission is granted to install the approved assembly inside a building, the assembly shall be readily accessible during regular District working hours (8 a.m. to 4:30 p.m., Monday through Friday).
  - g. If written permission is granted to install the approved assembly inside a building and it is installed more than five (5) feet above the floor, it must be equipped with a rigidly and permanently installed scaffolding acceptable to the District. This installation must also meet the requirements set forth by the U.S. Occupational Safety and Health Administration (OSHA) and the State of Washington Occupational Safety and Health Codes.
  - h. Reduced Pressure Principle Assemblies may be installed in a vault only if the relief valve discharge can be drained to daylight through a "boresight" type drain. The drain shall be of adequate capacity to carry the full rated flow of the assembly and shall be screened at both ends. An approved air gap shall be located at the relief valve orifice.
  - i. Where an approved assembly is deemed necessary, the model of the assembly and installations plans shall be submitted to the District for approval prior to installation.
  - j. Upon completion of the installation, the District shall be notified and an inspection will occur for approval of the installation. All approved assemblies must be registered with the District. Registration shall consist of date of installation, make, model, size and serial number of the assembly, and initial test report.
8. Backflow prevention assemblies to be inspected. Backflow prevention assemblies installed shall be inspected and tested:
- a. At the time of initial installation; and
  - b. Annually after initial installation; and
  - c. After the device is repaired or moved; and
  - d. More often if tests indicate repeated failures.

The District shall notify the service customer that an annual test of the backflow prevention assembly is required not less than 30 days before such annual test is required. The service customer may have such test performed by any person certified as a backflow assembly tester by the Washington State Board of Health and the results delivered to the District on a form prescribed by the District. If such test is not performed within the time required herein, the District may initiate proceedings for termination of water service.

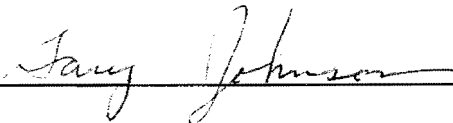
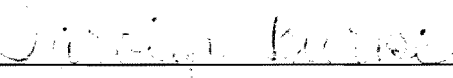
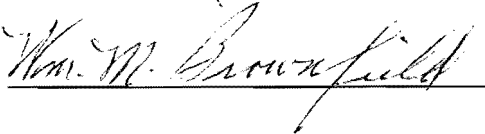
Backflow prevention assemblies shall be repaired, overhauled, or replaced as required by the District whenever they are found to be defective. Repairs and replacements are the sole responsibility of the customer and must be accomplished within thirty days of written notification from the District.

9. Procedures of abatement of unlawful cross-connections and installation of backflow prevention assemblies. Cross-connections declared in this resolution to be unlawful, whether presently existing or hereinafter installed, and/or services requiring backflow prevention assemblies, and/or unlawful use or operation of a private water supply system served by the District's water supply system, shall be subject to abatement in accordance with the following procedures:

- a. In the event that the District, or any of its designated representatives, determines that a cross connection as herein provided does exist, written notice shall be mailed to the person in whose name the water service is established under the District records or, alternatively, a copy of such written notice shall be posted on the premises served.
- b. The notice shall provide that the cross-connection described herein shall be corrected within the time period as determined and required by the District from the date such notice is mailed or posted on the premises.
- c. In the event such cross-connection is not abated within the prescribed time, water service to said premises may be shut off immediately.
- d. In the event that the cross-connection, in the opinion of the District, or any of its designated representatives, poses a potential health or system hazard to the public water supply, service from the District water supply system to the premises may be terminated without prior notice, provided, however, that notice will be posted on the premises in the manner heretofore provided at the time said service is terminated; provided, further, that the District shall notify the Department of Health when a water service has been shut off.
- e. Any new service customer with cross-connections as described herein shall be refused water service by the District until such time as the prospective service customer has installed a backflow prevention assembly as required by the District.

10. Adoption of State Regulations. Rules and regulations of the State Department of Health regarding public water supplies, entitled "Cross-Connection Control," WAC 246-290-490, and the American Water Works Association, Pacific Northwest Section's Fifth Edition of "Cross-Connection Manual - Accepted Procedure and Practice" as they presently exist and as they may, from time to time, be amended, are hereby adopted and incorporated herein by this reference as if set forth in full.
11. District not liable for damages. The District shall not be liable for damages, nor will allowances be made, for loss of production, sales, or service, or other consequential damages arising out of the implementation of any of the measures required by and/or contained in this Resolution.
12. Effective Date. This resolution and the policies set forth herein shall be effective upon the date of adoption by the Board of Commissioners set forth below.

ADOPTED by the Board of Commissioners of King County Water District No. 125 King County, Washington, at the regular open public meeting thereof the 12TH OF APRIL 1995.

  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_