8310.10

Village of Wellsville
Water Department

Cross-Connection Control Ordinance

Section 1
Authority

1.1 Responsibility of the Director

The Director of the Wellsville Department of Public Works, or his designated agent, shall inspect the plumbing in every building or premises in the Village as frequently as in his judgment may be necessary to ensure that such plumbing has been installed in such a manner as to prevent the possibility of pollution of the water supply of the Village of Wellsville by the plumbing. The Director shall notify or cause to be notified in writing to owner or authorized agent of the owner of any such building or premises, to correct, within a reasonable time set by the Director, any plumbing installed or existing contrary to or in violation of this ordinance, and which in his judgment, may, therefore, permit the pollution of theVillage water supply, or otherwise adversely affect the public health,

1.2 Inspection

The Director, or his designated agent, shall have the right of entry into any building, during reasonable hours, for the purpose of making inspection of the plumbing systems installed in such building or premises provided that with respect to the inspection of any single family dwelling, consent to such inspection shall first be obtained from a person of suitable age and discretion therein or in control thereof.

Section 2
Definitions

2.1 Agency

The Village of Wellsville with the authority and responsibility for the enactment and enforcement of this ordinance.

2.2 Airgap

The unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and flood-level rim of the receptacle.

2.3 Approved

Accepted by the agency as meeting an applicable specification stated or cited in this ordinance, or as suitable for the proposed use.

2.4 Auxiliary Supply

Any water source or system other than the Village of Wellsville's potable water supply that may be available in the building or premises.

2.5 Backflow

The flow of water or other liquids, mixtures, or substances into the distributing pipes of the Village of Wellsville's potable supply of water from any source or sources other than its intended source. Back siphonage is one type of backflow.

2.6 Backflow Preventer

A device or means to prevent backflow.

2.7 Back siphonage

Backflow resulting from negative pressures in the distributing pipes of the Village of Wellsville's potable water supply.

2.8 Barometric Loop

A loop of pipe rising at least thirty-five (35) feet, at its topmost point, above the highest fixture it supplies.

2.9 Check Valve

A self-closing device which is designed to permit flow of fluids in one direction and to close if there is a reversal of flow.

2.10 Contamination

See Pollution.

2.11 Cross-Connection

Any physical connection between the Village of Wellsville's potable water supply and any waste pipe, soil pipe, sewer, drain, or any unapproved source or system. Furthermore, it is any potable water supply outlet which is submerged or can be submerged in waste water and/or any other source of contamination . See

Backflow and Back siphonage.

2.12 Drain

Any pipe that carries waste water or waterborne wastes in a building drainage system.

2.13 Fixture, Plumbing

Installed receptacles, devices, or appliances supplied with water or that receive or discharge liquids or liquid-borne wastes.

2.14 Flood-Level Rim

The edge of the receptacle from which water overflows.

2.15 Hazard, Health

Any conditions, devices, or practices in the Village of Wellsville's water supply system and its operation which create, or, in the judgment of the Director, may create, a danger to the health and well-being of the water consumer. An example of a health hazard is a structural defect in the water supply system, whether of location, design, or construction, that regularly or occasionally may prevent satisfactory purification of the water supply or cause it to be polluted from extraneous sources.

2.16 Hazard, Plumbing

Any arrangement of plumbing including piping and fixtures whereby a cross-connection is created.

2.17 Hydro pneumatic Tank

A pressure vessel in which air pressure acts upon the surface of the water contained within the vessel, pressurizing the water distribution piping connected to the vessel.

2.18 Inlet

The open end of the water supply pipe through which the water is discharged into the plumbing fixture.

2.19 Plumbing System

Includes the water supply and distribution pipes, plumbing fixtures, and traps; soil, waste, and vent pipes; building drains and building sewers including their respective connections, devices, and appurtenances within the property lines of the premises; and water treating or water using equipment.

2.20 Pollution

The presence of any foreign substance (organic, inorganic, radiological, or biological) in water that tends to degrade its quality so as to constitute a hazard or impair the usefulness of the water.

2.21 Reduced Pressure Principle Backflow Preventer

An assembly of differential valves and check valves including an automatically opened spillage port to the atmosphere designed to prevent backflow.

2.22 Surge Tank

The receiving, nonpressure vessel forming part of the airgap separation between a potable and an auxiliary supply.

2.23 Vacuum

Any pressure less than that exerted by the atmosphere.

2.24 Vacuum Breaker, Nonpressure Type

A vacuum breaker designed so as not to be subjected to static line pressure.

2.25 Vacuum Breaker, Pressure Type

A vacuum breaker designed to operate under conditions of static line pressure.

2.26 Water, Potable

Water free from impurities in amounts sufficient to cause disease or harmful physiological effects. Its bacteriological and chemical quality shall conform to the requirements of the Federal Drinking Water Standards or the regulations of the public health authority having jurisdiction.

2.27 Water, Nonpotable

Water that is not safe for human consumption or that is of questionable potability.

Section 3
General Requirements

3.1 General

The Village of Wellsville's water supply system shall be designed, installed, and maintained in such a manner as to prevent contamination from nonpotable liquids, solids, or gases from being introduced into the potable water supply through cross-connections or any other piping connections to the system.

3.2 Cross-Connections Prohibited

Cross-connections between the Village of Wellsville's potable water system and other systems or equipment containing water or other substances of unknown or questionable safety are prohibited except when and where, as approved by the authority having jurisdiction, suitable protective devices such as the reduced pressure zone backflow preventer or equal are installed, tested, and maintained to insure proper operation on a continuing basis.

3.3 Interconnections

Interconnection between two or more public water supplies shall be permitted only with approval of the health authority having jurisdiction.

3.4 Individual Water Supplies

Cross-connections between an individual water supply and the Village of Wellsville's potable public supply shall not be made unless specifically approved by the health authority having jurisdiction.

3.5 Connections to Boilers

Potable water connections to boilers shall be made through an airgap or provided with an approved backflow preventer.

3.6 Prohibited Connections to Fixtures and Equipment

Connection to the Village of Wellsville's potable water supply system for the following is prohibited unless protected against backflow in accordance with section 3.8 or as set out herein.

a. Bidets
b. Operating, dissection, embalming, and mortuary tables or similar equipment; in such installation the hose used for water supply shall terminate at least twelve (12) inches away from every point of the table or attachments.
c. Pumps for nonpotable water, chemicals, or other substances: priming connections may made only through an airgap.
d. Building drainage, sewer, or vent systems.
e. Any other fixture of similar hazard.

3.7 Refrigerating Unit Condensers and Cooling Jackets

Except where potable water provided for a refrigerator condenser or cooling jacket is entirely outside the

piping or tank containing a toxic refrigerant, the inlet connection shall be provided with an approved check valve. Also adjacent to and at the outlet side of the check valve, an approved pressure relief valve set to relieve at five (5) psi above the maximum water pressure at the point of installation shall be provided if the refrigeration units contain more than twenty (20) pounds of refrigerants.

3.8 Protection Against Backflow and Back siphonage

3.81 Water Outlets

The Village of Wellsville's potable water system shall be protected against backflow and Back siphonage by providing and maintaining at each outlet:

a. Airgap - An airgap, as specified in section 3.82, between the potable water outlet and the flood rim of the fixture it supplies or between the outlet and any other source of contamination, or

b. Backflow Preventer - A device or means to prevent backflow.

3.82 Minimum Required Airgap

a. How Measured - The minimum required airgap shall be measured vertically from the lowest end of a potable water outlet to the flood rim or line of the fixture or receptacle in which it discharges.

b. Size - The minimum required airgap shall be twice the effective opening of a potable water outlet unless the outlet is a distance less than three (3) times the effective opening away from a wall or similar vertical surface, in which cases the minimum required airgap shall be three (3) times the effective opening of the outlet. In no case shall the minimum required airgap be less than shown in table 3.82.

3.83 Approval of Devices

Before any device for the prevention of backflow or back siphonage is installed , it shall have first been certified by a recognized testing laboratory acceptable to the agency Director. Devices installed in a building potable water supply distribution system for protection against backflow shall be maintained in good working condition by the person or persons responsible for the maintenance of the system.

The agency Director or his designee shall inspect routinely such devices and if found to be defective or inoperative shall require the replacement thereof.

3.84 Installation of Devices

a. Vacuum Breakers - Vacuum breakers shall be installed with the critical level at least six (6) inches above the flood rim of the fixture they serve and on the discharge side of the last control valve to the fixture. No shutoff valve or faucet shall be installed beyond the vacuum breaker. For closed equipment or vessels such as pressure sterilizers the top of the vessel shall be treated as the flood level rim but a check valve shall be installed on the discharge side of the vacuum breaker.

b. Reduced Pressure Principle Backflow Preventer - A reduced pressure type backflow preventer may be installed subject to full static pressure.

c. Devices of All Types - Backflow and back siphonage preventing devices shall be accessibly located preferably in the same room with the fixture they serve. Installation in utility or service spaces, provided they are readily accessible, is also permitted.

3.85 Tanks and Vats - Below Rim Supply

a. Where a potable water outlet terminates below the rim of a tank or vat and the tank or vat has an overflow of diameter not less than given in table 3.85, the overflow pipe shall be provided with an airgap as close to the tank as possible.

b. The potable water outlet to the tank or vat shall terminate a distance not less the one and one-half (1 ½) times the height to which water can rise in the tank above the top of the overflow. This level shall be established at the maximum flow rate of the supply to the tank or vat and with all outlets except the airgap overflow outlet closed.

c. The distance from the outlet to the high water level shall be measured from the critical point of the potable water supply outlet.

3.86 Protective Devices Required

Approved devices to protect against backflow and back siphonage shall be installed at all fixtures and equipment where backflow and/or back siphonage may occur and where a minimum airgap cannot be provided between the water outlet to the fixture or equipment and its flood level rim.

a. Connections Not Subject to Backpressure - Where a water connection is not subject to backpressure, a vacuum breaker shall be installed on the discharge side of the last valve on the line serving the fixture or equipment. A list of some conditions requiring protective devices of this kind is given in table 3.86 A, "Cross-Connections Where Protective Devices are Required and Critical Level (C-L) Settings for Vacuum Breakers."

b. Connections Subject to Backpressure - Where a potable water connection is made to a line, fixture, tank, vat, pump, or other equipment with a hazard of backflow or backpressure, and an airgap cannot be installed, the Director may require the use of an approved reduced pressure principle backflow preventer. A partial list of such connections is shown in table 3.86 B.

3.87 Barometric Loop

Water connections where an actual or potential back siphonage hazard exists may in lieu of devices specified in section 3.86 be provided with a barometric loop. Barometric loops shall precede the point of connection.

3.88 Double Check - Double Gate Valves

The Director may authorize installation of approved, double check - double gate valve assemblies with test cocks as protective devices against backflow in connections between a potable water system and other fluid systems which present no significant health hazard in the judgment of the Director.

3.89 Low Pressure Cutoff Required on Booster Pumps

When a booster pump is used on a water pressure booster system and the possibility exists that a positive pressure of ten (10) psi or less may occur on the suction side of the pump, there shall be installed a low pressure cutoff on the booster pump to prevent the creation of a vacuum or negative pressure on the suction side of the pump, thus cutting off water to the other ts.

Table 3.82
Minimum Airgaps for Generally Used Plumbing Fixtures

Fixture	Minimum Airgap	
	When not affected by near wall [1] (Inches)	When affected by near wall [2] (Inches)
Lavatories and other fixtures with effective openings not greater then ½ inch diameter	1.0	1.50
Sink, laundry trays, goose-neck bath faucets and other fixtures with effective openings not greater than 3/4 inches diameter	1.5	2.25
Over rim bath fillers and other fixtures with effective openings not greater than 1 inch in diameter	2.0	3.0
Drinking water fountains - single orifice 7/16 (0.437) inches diameter or multiple orifices having total area of 0.150 square inches. (Area of circle 7/16 inches diameter)	1.0	1.50
Effective openings greater than 1 inch	(3)	(4)

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

2. Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening require a greater airgap when spaced closer to the nearest inside edge of spout opening than specified in note 1 above. The effect of three (3) or more such vertical walls or ribs has not been determined. In such cases, the airgap shall be measured from the top of the wall.

3. Two (2) times diameter of effective opening.

4. Three (3) times diameter of effective opening.

TABLE 3.85
SIZES OF OVERFLOW PIPES FOR WATER SUPPLY TANKS

Maximum capacity of water supply line to tank.	Diameter of overflow pipe (in. ID)	Maximum capacity of water supply line to tank.	Diameter of overflow pipe (in. ID)
0 - 50 g.p.m.	2	400 - 700 g.p.m.	5
50 - 150 g.p.m.	2 ½	700 - 1000 g.p.m.	6
100 - 200 g.p.m.	3	Over 1000 g.p.m.	8
200 - 400 g.p.m.	4		

TABLE 3.86 A
CROSS - CONNECTIONS WHERE PROTECTIVE DEVICES ARE REQUIRED AND CRITICAL LEVEL (C-L) SETTINGS FOR VACUUM BREAKERS [A]

Fixture or Equipment	Method of Installation
Aspirators & Ejectors	C-L at least six (6) inches above flood level of receptacle served.
Dental units	On models without built in vacuum breakers C-L at least six (6) inches above flood level rim of bowl.
Dishwashing machines	C-L at least six (6) inches above flood level of machine. Install on both hot and cold water supply lines.
Flushometers (closet & urinals)	C-L at least six (6) inches above top of fixture supplies.
Garbage can cleaning machine	C-L at least six (6) inches above flood level of machine. Install on both hot and cold water supply lines.
Hose outlets	C-L at least six (6) inches above highest point on hose lines.
Laundry machines	C-L at least six (6) inches above flood level of machine. Install on both hot and cold water supply lines.
Lawn sprinklers	C-L at least twelve (12) inches above highest sprinkler or discharge outlet.
Steam tables	C-L at least six (6) inches above flood level.
Tanks and vats	C-L at least six (6) inches above flood level rim or line.
Trough urinals	C-L at least thirty (30) inches above perforated flush pipe.
Flush tanks	Equip with approved ball cock. Where ball cocks touch tank water equip with vacuum breaker at least one (1) inch above overflow outlets. Where ball cock does not touch tank water install ball cock outlet at least one (1) inch above overflow outlet or provide vacuum breaker as specified above.
Hose bibs (where aspirators of ejectors could be connected)	C-L at least six (6) inches above flood level of receptacle served.

A Critical level (C-L) is defined as the level to which the vacuum breaker may be submerged before backflow w ill occur. Where the C-L is not shown on the preventer, the bottom of the device shall be taken as the C-L.

TABLE 3.86 B
PARTIAL LIST OF CROSS - CONNECTIONS WHICH MAY BE SUBJECT TO BACKPRESSURE

Chemical lines	Pumps
Dock water outlets	Steam Lines
Individual water supplies	Swimming pools
Industrial process water lines	Tank and vats - bottom inlets
Pressure tanks	Hose bibs

SECTION 4
MAINTENANCE REQUIREMENTS

4.1 General Requirements

It shall be the responsibility of building and premise owners to maintain all backflow preventers and vacuum breakers within the building or on the premises in good working order and to make no piping or other arrangements for the purpose of bypassing backflow devices.

4.2 Backflow Preventers

Periodic testing and inspection schedules shall be established by the Director for all backflow preventers and the interval between such testing and inspections and overhauls of each device shall be established in accordance with the age and condition of the device. Inspection intervals should not exceed one (1) year, overhaul intervals should not exceed five (5) years. These devices should be inspected frequently after the initial installation to assure that they have been installed properly and that debris resulting from the installation has not interfered with the functioning of the device. The testing procedures shall be in accordance with the manufacturer's instructions when approved by the Director.

SECTION 5
VIOLATIONS AND PENALTIES

5.1 Notification of Violation

The Director shall notify the owner, or authorized agent of the owner, of the building or premises in which there is found a violation of this ordinance, of such violation. The Director shall set a reasonable time for the owner to have the violation removed or corrected. Upon failure of the owner to have the defect corrected by the end of the specified time interval the Director may, if in his judgment an imminent health hazard exists, cause the water service to the building or premises to be terminated, and/or recommend such additional fines or penalties to be invoked as herein may be provided.

5.2 Fines

The owner or authorized agent of the owner responsible for the maintenance of the plumbing systems in the building who knowingly permits a violation to remain uncorrected after the expiration of time set by the Director shall, upon conviction thereof by the court, be required to pay a fine of not more than one hundred dollars ($100) for each violation. Each day of failure to comply with the requirements of the ordinance, after the specified time provided under 5.1, shall constitute a separate violation.

APPENDIX A
PARTIAL LIST OF PLUMBING HAZARDS

Fixtures With Direct Connections

Air conditioning, air washer
Air conditioning, chilled water
Air conditioning, condenser water
Air line
Aspirator, laboratory
Aspirator, medical
Aspirator, weedicide and fertilizer sprayer
Autoclave and sterilizer
Auxiliary system, industrial
Auxiliary system, surface water
Auxiliary system, unapproved well supply
Boiler system
Chemical feeder, pot type
Chlorinator
Coffee urn
Cooling system
Dishwasher
Fire standpipe or sprinkler system
Fountain, ornamental
Hydraulic equipment
Laboratory equipment
Lubrication, pump bearings
Photostat equipment
Plumber's friend, pneumatic
Pump, pneumatic ejector
Pump, prime line
Pump, water operated ejector
Sewer, sanitary
Sewer, storm
Swimming pool

Fixtures With Submerged Inlets

Baptismal fount
Bathtub
Bedpan washer, flushing rim
Bidet
Brine tank
Cooling tower
Cuspidor
Drinking fountain
Floor drain, flushing rim
Garbage can washer
Ice maker
Laboratory sink, serrated nozzle
Laundry machine
Lavatory
Lawn sprinkler system
Photo laboratory sink
Sewer flushing manhole
Slop sink, flushing rim
Slop sink, threaded supply
Steam table
Urinal, siphon jet blowout
Vegetable peeler

Water closet, flush tank, ball cock
Water closet, flush valve, siphon jet