

CHAPTER 10

SAFE DRINKING WATER ACT

Authority

N.J.S.A. 13:1D-1 et seq., 58:10A-1 et seq., 58:11-9.1 et seq., 58:11-23 et seq., 58:11-64 et seq., and 58:12A-1 et seq.

Source and Effective Date

R.2000 d.354, effective July 31, 2000. See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Chapter Expiration Date

In accordance with N.J.S.A. 52:14B-5.1c, Chapter 10, Safe Drinking Water Act, expires on January 27, 2006. See: 36 N.J.R. 295(a).

Chapter Historical Note

Chapter 10, Bureau of Potable Water, was adopted and became effective prior to September 1, 1969.

Chapter 10, Bureau of Potable Water, was repealed and Chapter 10, Safe Drinking Water Act, was adopted as new rules by R.1979 d.271, effective July 13, 1979. See: 11 N.J.R. 170(a), 11 N.J.R. 374(b).

Pursuant to Executive Order No. 66(1978), Chapter 10, Safe Drinking Water Act, was readopted as R.1983 d.244, effective June 3, 1983. See: 15 N.J.R. 592(a), 15 N.J.R. 1019(c).

Pursuant to Executive Order No. 66(1978), Chapter 10, Safe Drinking Water Act, was readopted as R.1989 d.514, effective September 1, 1989. See: 21 N.J.R. 1945(a), 21 N.J.R. 3098(a).

Pursuant to Executive Order No. 66(1978), Chapter 10, Safe Drinking Water Act, was readopted as R.1994 d.482, effective August 25, 1994. See: 26 N.J.R. 2720(a), 26 N.J.R. 3833(a).

Pursuant to Executive Order No. 66(1978), Chapter 10, Safe Drinking Water Act, was readopted as R.1996 d.50, effective December 26, 1995. See: 27 N.J.R. 4060(a), 28 N.J.R. 850(a).

Chapter 10, Safe Drinking Water Act, except Subchapter 13, was repealed and Chapter 10, Safe Drinking Water Act, was adopted as new rules by R.1996 d.536, effective November 18, 1996. See: 27 N.J.R. 4064(a), 28 N.J.R. 4900(a).

Subchapter 13, Water Supply and Wastewater Collection and Treatment Systems: Examining and Licensing of Operators, was recodified as N.J.A.C. 7:10A-1 by R.1997 d.48, effective February 3, 1997. See: 28 N.J.R. 4300(a), 29 N.J.R. 480(c).

Pursuant to Executive Order No. 66(1978), Chapter 10, Safe Drinking Water Act, was readopted as R.2000 d.354, effective July 31, 2000, and Subchapter 13, Standards for Technical, Managerial, and Financial Capacity of Public Community and Noncommunity Water Systems, was adopted as new rules by R.2000 d.354, effective August 21, 2000. See: Source and Effective Date. See, also, section annotations.

Notice of Receipt of Petition for Rulemaking: Fluoridation of the Public Water Supply of the State of New Jersey. See 35 N.J.R. 891(a), 1454(a).

CHAPTER TABLE OF CONTENTS

SUBCHAPTER 1. GENERAL PROVISIONS

- 7:10-1.1 Authority
7:10-1.2 Scope, applicability and purpose
7:10-1.3 Definitions
7:10-1.4 Procedures for inspections and sanitary surveys of water systems

7:10-1.5 Severability

SUBCHAPTER 2. GENERAL REQUIREMENTS

- 7:10-2.1 Department inventory of public water systems
7:10-2.2 Department recordkeeping and reporting
7:10-2.3 Plan for the provision of potable water in emergencies
7:10-2.4 Reporting of changes to plants and emergencies
7:10-2.5 Ban on further connections to over-extended or otherwise inadequate systems
7:10-2.6 Program information
7:10-2.7 Managerial and technical competence of water systems

SUBCHAPTER 3. CIVIL ADMINISTRATIVE PENALTIES AND REQUESTS FOR ADJUDICATORY HEARINGS

- 7:10-3.1 Scope
7:10-3.2 Authority
7:10-3.3 Procedures for issuing an administrative order pursuant to the State Act
7:10-3.4 Procedures for assessment, settlement and payment of civil administrative penalties for violations
7:10-3.5 Procedures to request an adjudicatory hearing to contest an administrative order and/or a notice of civil administrative penalty assessment; procedures for conducting adjudicatory hearings
7:10-3.6 Civil administrative penalties for violations of the State Act—general
7:10-3.7 Civil administrative penalty for failure to pay a fee
7:10-3.8 Civil penalties for violations of the State Act
7:10-3.9 Civil actions for violations of the State Act

SUBCHAPTER 4. DISINFECTION

7:10-4.1 Disinfection

SUBCHAPTER 5. STATE PRIMARY DRINKING WATER REGULATIONS

- 7:10-5.1 Applicability of National Regulations
7:10-5.2 Discretionary changes to National Regulations
7:10-5.3 Analytical requirements
7:10-5.4 Reporting requirements
7:10-5.5 Public notification
7:10-5.6 Record keeping
7:10-5.7 Remediation requirements and procedures

SUBCHAPTER 6. VARIANCES AND EXEMPTIONS

- 7:10-6.1 Variances
7:10-6.2 Exemptions
7:10-6.3 Disposition of variance or exemption request
7:10-6.4 Renewal of variances and exemptions
7:10-6.5 Requests for adjudicatory hearings

SUBCHAPTER 7. STATE SECONDARY DRINKING WATER REGULATIONS

- 7:10-7.1 Authority, purpose and scope
7:10-7.2 Recommended upper limits and optimum ranges for physical, chemical and biological characteristics in drinking water
7:10-7.3 Monitoring
7:10-7.4 Public notification

SUBCHAPTER 8. DRINKING WATER ADDITIVES

- 7:10-8.1 Purpose and scope
7:10-8.2 Drinking water additives

**SUBCHAPTER 9. SURFACE WATER TREATMENT REQUIREMENTS**

- 7:10-9.1 Purpose and scope
- 7:10-9.2 Discretionary changes to national surface water treatment requirements
- 7:10-9.3 Determination of ground water sources to be evaluated for direct influence of surface water
- 7:10-9.4 Monitoring requirements and criteria for determination for ground water sources under the direct influence of surface water
- 7:10-9.5 Surface water treatment plant reporting requirements
- 7:10-9.6 Additional requirements

**SUBCHAPTER 10. PHYSICAL CONNECTIONS AND CROSS CONNECTION CONTROL BY CONTAINMENT**

- 7:10-10.1 Purpose and scope
- 7:10-10.2 General provisions and prohibitions
- 7:10-10.3 Approved physical connection installation requirements
- 7:10-10.4 Installation
- 7:10-10.5 Physical connection permit application and renewal procedures
- 7:10-10.6 Inspection and testing requirements and procedures for physical connection installations
- 7:10-10.7 Physical connection permit modifications; termination of physical connection permits on removal of physical connection installations
- 7:10-10.8 Requirements for approval as a certifying agency
- 7:10-10.9 Cross-connection control by containment
- 7:10-10.10 Requests for adjudicatory hearings

**APPENDIX A**

**APPENDIX B**

**SUBCHAPTER 11. STANDARDS FOR THE CONSTRUCTION OF PUBLIC COMMUNITY WATER SYSTEMS**

- 7:10-11.1 Purpose and scope
- 7:10-11.2 Penalties
- 7:10-11.3 Deviations from construction standards
- 7:10-11.4 Additional definitions and general provisions
- 7:10-11.5 Permit application requirements
- 7:10-11.6 General requirements for source, treatment, storage and distribution components
- 7:10-11.7 Standards for the construction and development of ground water sources
- 7:10-11.8 Standards for the construction and development of surface water sources and ground water sources under the direct influence of surface water
- 7:10-11.9 Standards for the construction of pumping stations
- 7:10-11.10 Permit requirements and standards for the construction of distribution systems
- 7:10-11.11 Distribution storage requirements
- 7:10-11.12 Chemical handling and chemical feed systems
- 7:10-11.13 Pretreatment requirements
- 7:10-11.14 Filtration
- 7:10-11.15 Miscellaneous treatment processes
- 7:10-11.16 Disinfection of public community water system water supplies
- 7:10-11.17 Requests for adjudicatory hearings

**SUBCHAPTER 12. STANDARDS FOR THE CONSTRUCTION OF PUBLIC NONCOMMUNITY WATER SYSTEMS AND NONPUBLIC WATER SYSTEMS**

- 7:10-12.1 Authority and scope
- 7:10-12.2 Penalties
- 7:10-12.3 Additional definitions
- 7:10-12.4 General provisions and prohibitions
- 7:10-12.5 Deviations from construction standards
- 7:10-12.6 Water volume requirements
- 7:10-12.7 Sources of water
- 7:10-12.8 Frost protection
- 7:10-12.9 Physical connection
- 7:10-12.10 Priming systems
- 7:10-12.11 Disinfection of water system components
- 7:10-12.12 Minimum distance requirements
- 7:10-12.13 through 12.21 (Reserved)
- 7:10-12.22 Test for yield and submission of well report
- 7:10-12.23 Springs
- 7:10-12.24 Cisterns and dug wells
- 7:10-12.25 Surface water sources
- 7:10-12.26 through 12.29 (Reserved)
- 7:10-12.30 Water quality analysis and treatment
- 7:10-12.31 Chemical handling and chemical feed systems
- 7:10-12.32 Disinfection of public noncommunity and nonpublic water systems
- 7:10-12.33 Chemical and physical treatment
- 7:10-12.34 General requirements for storage of finished water
- 7:10-12.35 Required storage capacity
- 7:10-12.36 General requirements for distribution systems
- 7:10-12.37 Capacity and size of service lines
- 7:10-12.38 Water crossings
- 7:10-12.39 General requirements for the certification of new, altered or replacement nonpublic or public noncommunity water systems
- 7:10-12.40 Additional requirements for the certification of single dwelling nonpublic water systems and other nonpublic water systems
- 7:10-12.41 Additional requirements for the certification of public noncommunity water systems
- 7:10-12.42 Requirements for certification by the Department of water supply systems for 50 or more realty improvements
- 7:10-12.43 Requests for adjudicatory hearings

**SUBCHAPTER 13. STANDARDS FOR TECHNICAL, MANAGERIAL, AND FINANCIAL CAPACITY OF PUBLIC COMMUNITY AND NONCOMMUNITY WATER SYSTEMS**

- 7:10-13.1 Purpose and scope
- 7:10-13.2 Additional definition
- 7:10-13.3 Demonstration of technical capacity for community water systems
- 7:10-13.4 Demonstration of managerial and financial capacity for community water systems
- 7:10-13.5 Demonstration of technical capacity for public nontransient noncommunity water systems
- 7:10-13.6 Demonstration of managerial and financial capacity for nontransient noncommunity water systems
- 7:10-13.7 Public water systems under the jurisdiction of the Department of Community Affairs or under the jurisdiction of the Board of Public Utilities

**SUBCHAPTER 14. (RESERVED)**

**SUBCHAPTER 15. FEES**

- 7:10-15.1 Purpose and scope
- 7:10-15.2 Payment of fees
- 7:10-15.3 Calculation of permit application review fees
- 7:10-15.4 Calculation of annual operation fees
- 7:10-15.5 Fees for physical connection permits

## SUBCHAPTER 1. GENERAL PROVISIONS

**7:10-1.1 Authority**

These rules are promulgated pursuant to the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., as amended; the Subsurface and Percolating Waters Act, N.J.S.A. 58:4A-4.1 et seq.; the Realty Improvement Sewerage and Facilities Act, N.J.S.A. 58:11-23 et seq.; the Water Supply Management Act, N.J.S.A. 58:1A-1 et seq.; and N.J.S.A. 58:11-9.1 et seq.

**7:10-1.2 Scope, applicability and purpose**

These rules implement New Jersey's Safe Drinking Water Program for the purpose of ensuring the provision of safe drinking water to consumers, and enabling the Department to assume primary enforcement responsibility under the Federal Safe Drinking Water Act, P.L. 93-523, 42 U.S.C. §§ 300f et seq. The Safe Drinking Water Program also ensures the provision of safe water of adequate pressure and volume by implementing portions of the Water Supply Management Act addressing storage, emergency plans and reducing unaccounted for water (water lost in the distribution system); and by issuing physical connection permits under the N.J.S.A. 58:11-9.1 et seq.; and by establishing standards for construction and procedures for certifications, under the Realty Improvement, Sewerage and Facilities Act, N.J.S.A. 58:11-23 et seq.

**7:10-1.3 Definitions**

The following words and terms, when used in this chapter, shall have the following meanings unless the context clearly indicates otherwise. Additional definitions specifically applicable to N.J.A.C. 7:10-11, 12 and 13 are set forth at N.J.A.C. 7:10-11.4, 12.3 and 13.2, respectively.

"Action level" means the concentration of lead or copper in water specified in the National Regulations at 40 CFR 141.80 (c) which determines, in some cases, the treatment requirements set forth at 40 CFR 141.81, 141.82 and 141.83 that a water system is required to complete.

"Acute violation" means an exceedance of an MCL for a contaminant, for example, fecal coliform or nitrates, that is likely to have immediate health effects.

"Additive" means any substance specifically formulated to be added to a water system during the water treatment process to achieve applicable drinking water standards.

"Administrator" means the Administrator of the United States Environmental Protection Agency or his or her authorized representative.

"Administrative authority" means the County Environmental Health Act (CEHA) certified agency or the local board of health having jurisdiction. When water systems serve county, State, and/or Federal facilities, the administra-

tive authority shall mean the Bureau of Safe Drinking Water in the Department.

"Annual operation fee" means the annual fee assessed to each public community water system including each holder of a permit to construct a public community water system issued pursuant to N.J.A.C. 7:10-11 and each recipient of an approval to construct a public noncommunity water system or a public nontransient noncommunity water system issued pursuant to N.J.A.C. 7:10-12.

"Annual physical connection renewal fee" means the fee assessed for the annual renewal of a physical connection permit pursuant to N.J.A.C. 7:10-10.

"ANSI" means the American National Standards Institute.

"Approved physical connection installation" means a double check valve assembly or a reduced pressure zone backflow preventer assembly which is designed, installed and tested in accordance with N.J.A.C. 7:10-10.

"Backflow prevention device" means either a double check valve assembly or a reduced pressure zone assembly used for the purpose of preventing water flow in the opposite direction of normal flow pattern.

"Bulk distribution system" means a water system that sells water wholesale in bulk quantities to public community water systems for resale to consumers.

"Bulk purchase system" means a water system that buys all of its treated water from another water system(s) and has no water source(s) of its own.

"Bypass" means a secondary pipe or conduit connected to the main pipe or conduit for the purpose of conducting water around a valve, fixture, device, pump station or treatment process.

"Certified laboratory" means a laboratory certified by the Department pursuant to the Regulations Governing Laboratory Certification and Standards of Performance, N.J.A.C. 7:18, to conduct testing for contaminants regulated under the State Act.

"Cistern" means a tank for the collection of rain water draining from a roof or roofs, which water is intended to be used for potable purposes.

"Commissioner" means the Commissioner of the Department of Environmental Protection or his or her designated representative.

"Confined aquifer" means an aquifer which contains ground water under pressure between or below relatively impermeable or significantly less permeable material so that the water surface rises above the top of the aquifer in a well which derives its water from that aquifer.

“Consolidated aquifer” means an aquifer contained within a rock formation.

“Construction material” means any building material typically used in the construction of water system facilities, including but not limited to concrete, mortar, grout, steel, ductile iron, copper, brass or zinc.

“Contaminant” means any physical, chemical, biological or radiological substance in water.

“County” means any county or agency or instrumentality of one or more thereof.

“Cross-connection” means any actual or potential connection between a public water system and a source of contamination, such as industrial process water or an irrigation system.

“Department” means the Department of Environmental Protection.

“Dependable yield” means that maintainable yield of water from a surface or ground water source(s) which is available continuously during projected future conditions, including a repetition of the most severe drought of record, without creating undesirable effects, as determined by the Department.

“Detectable disinfectant residual” means a chlorine residual of at least 0.05 mg/l (total chlorine, combined chlorine or chlorine dioxide), or a heterotrophic plate count of 500/ml or less, at the point of collection.

“Distribution system” means all pipes and conveyances from a well or water treatment plant, including storage facilities.

“Double check valve assembly” means a backflow prevention device consisting of two independently acting soft-seated check valves, internally force loaded to a normally closed position between two tightly closing shut-off valves, and with means of testing for tightness. A double check valve assembly includes a double check valve detector assembly for the purposes of this chapter.

“Dug well” means a water table well that is excavated by means of picks, shovels, or similar hand-tools.

“Entry point” means a point in the distribution system where treated water from a treatment plant enters into the distribution system.

“Facility with cross-connection hazards” means a facility that is served by a public community water system and that contains a chemical substance or solution, uses a chemical, physical or biological process, or uses water in a manner that might contaminate the public community water system by way of a cross-connection. Examples of such facilities are listed in Appendix A and incorporated herein by reference.

“Federal Act” means the Safe Drinking Water Act, P.L. 93-523, 42 U.S.C. §§ 300f et seq., as amended.

“Federal agency” means any department, agency or instrumentality of the United States.

“Filtration avoidance criteria” means criteria specified in the National Primary Drinking Water Regulations, 40 CFR 141.71, establishing specific requirements for source water quality conditions and site-specific conditions for a public water system to avoid filtering its surface water source or its ground water source under the direct influence of surface water.

“First offense” means a violation for which there is no prior similar violation.

“Ground water” means the portion of water beneath the land surface that is within the saturated zone, in which all the subsurface voids in the rock or soil are filled with water.

“Initial physical connection permit fee” means the fee assessed for an initial physical connection permit pursuant to N.J.A.C. 7:10-10.

“Interconnection” means a water supply connection with another water system or systems.

“Low risk formation” means:

1. An aquifer which the Department determines to be confined by an overlying layer or bed of distinctly lower permeability, based upon an acceptable pump test report, or on published reports and/or technical memoranda of the New Jersey Geological Survey or published reports of the U.S. Geological Survey; or

2. An unconsolidated geologic formation, in which the raw water source is a well screened at a depth of at least 200 feet.

“Maximum contaminant level” or “MCL” means the maximum permissible level of a contaminant in water measured at the point of entry to the distribution system or at the free-flowing outlet of the ultimate user of a public water system or other water system to which State primary drinking water regulations apply. Any contaminant added to the water under circumstances controlled by the user, except a contaminant resulting from corrosion of piping and plumbing caused by water quality, is excluded from this definition.

“MCL violation” means exceedance of an MCL for any contaminant regulated under N.J.A.C. 7:10-5, where such exceedance has been determined by specific procedures as established under the National Regulations.

“Method detection limit” or “MDL” means the minimum concentration of a contaminant, determined pursuant to 40 CFR 136 (Appendix B) or N.J.A.C. 7:18, that can be measured and reported with 99 percent confidence as an analytical result greater than zero.

“MGD” means million gallons per day.

“Municipality” means any city, town, township, borough or village or any agency or instrumentality of one or more thereof.

“National primary drinking water regulations” or “National Regulations” means the current primary drinking water regulations promulgated at 40 CFR Part 141 by the Administrator pursuant to the Federal Act, as such regulations are amended or supplemented from time to time.

“Nonpublic water system” means a water system that is not a public water system. A nonpublic water system includes any water system providing potable water to individual dwellings and any water system regularly serving fewer than 15 service connections or 25 individuals.

“NSF” means National Sanitation Foundation International, Ann Arbor, Michigan.

“Permit application review fee” means the application fee assessed for a permit to construct a public community water system in accordance with N.J.A.C. 7:10-11.

“Person” means any individual, corporation, company, firm, association, joint stock company, partnership, consortium, joint venture, commercial or any other legal entity, municipality, State agency or Federal agency.

“Physical connection” means a connection between a public community water system and any unapproved water supply.

“Physical connection permit” means the permit issued pursuant to N.J.A.C. 7:10-10.

“Population served” means the population determined during the Department’s most recent inspection and/or sanitary survey conducted pursuant to N.J.A.C. 7:10-1.4.

“Potable water” means any water used, or intended to be used, for drinking and culinary purposes which is free from impurities in amounts sufficient to cause disease or harmful physiological effects, with the bacteriological and chemical quality conforming to applicable standards.

“Primary drinking water regulation” means a regulation which:

1. Applies at a minimum to public water systems;
2. Specifies contaminants which, in the judgment of the Department, may have adverse effect on the health of persons;
3. Specifies for each such contaminant either a maximum contaminant level if, in the judgment of the Department, it is economically and technologically feasible to ascertain the level of such contaminant in water in public water systems, or if, in the judgment of the Department, it

is not economically and technologically feasible to ascertain the level of such contaminant, each treatment technique known to the Department which leads to a reduction in the level of such contaminant sufficient to satisfy the requirements of Section 4 of the State Act; and

4. Contains criteria and procedures to assure a supply of drinking water which dependably complies with such maximum contaminant levels, including quality control, sampling frequencies, and testing procedures to insure compliance with such levels and to insure proper operation and maintenance of the system, and requirements as to the minimum quality of water which may be taken into the system, and siting for new facilities for public water systems.

“Prior similar violation” means, for any given violation, a previous violation that:

1. Is within the same category of violation listed in N.J.A.C. 7:10-3.6(d)1, (d)2 or (d)3;
2. Has been cited by the Department in an administrative order and/or notice of civil administrative penalty assessment issued to the violator; and
3. Was not corrected within the amount of time stated in the administrative order and/or notice of civil administrative penalty assessment.

“Project construction cost” means the total estimated cost of construction contained in the engineer’s report submitted as part of the application for a permit to construct a public community water system under N.J.A.C. 7:10-11, excluding engineering, legal fees, financial fees and land acquisition costs.

“Public community water system” means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

“Public noncommunity water system” means a public water system that is not a public community water system and is either a “public nontransient noncommunity water system” or a “public transient noncommunity water system” as defined in this section.

“Public nontransient noncommunity water system” means a public water system that is not a public community water system and that regularly serves at least 25 of the same persons for more than six months in any given calendar year.

“Public transient noncommunity water system” means a public water system that is not a public community or a public nontransient noncommunity water system and that serves at least 25 transient individuals for at least 60 days in any given calendar year.

“Public water system” means a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily for at least 60 days out of the year. Such term includes any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily in connection with such system, and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a “public community water system” or a “public noncommunity water system” as defined in this section.

“Raw water” means untreated ground or surface water.

“Reduced pressure zone backflow preventer assembly” means a backflow prevention device which consists of two independently acting soft-seated check valves, internally force loaded to a normally closed position and separated by an intermediate chamber (or zone) in which there is an automatic relief port, which vents to atmosphere, internally loaded to a normally open position between two tightly closing shut-off valves, and which has means for testing the tightness of the check valves and opening of the relief port. A reduced pressure zone backflow preventer assembly includes a reduced pressure zone detector assembly for the purposes of this chapter.

“Safe Drinking Water Program” means the regulatory activities conducted by the Department to carry out the provisions and purposes of the State Act and portions of the Water Supply Management Act, N.J.S.A. 58:1A-1 et seq., addressing the provisions of adequate storage, emergency plans, and reducing the amount of unaccounted for water. The program also carries out regulatory activities of N.J.S.A. 58:11-9.1 et seq. controlling the interconnections between public community water systems and unapproved water systems, and establishes standards for construction and procedures for certifications pursuant to the Reality Improvement, Sewerage and Facilities Act, N.J.S.A. 58:11-23 et seq.

“Sanitary survey” means an on-site review by an authorized representative of the Department of the source(s), facilities, equipment, operation and maintenance of a public or nonpublic water system for the purpose of evaluating the adequacy of the source(s), facilities, equipment, operation and maintenance for producing and distributing safe drinking water with adequate pressure and volume.

“Second offense” means a violation for which there is only one prior similar violation.

“Secondary drinking water regulation” means a regulation applying to one or more water systems, and which specifies the recommended upper limits or optimum ranges of contaminants that are necessary to protect the public welfare. A secondary drinking water regulation may apply to any contaminant in drinking water which may adversely affect the taste, odor, or appearance of such water or which may otherwise adversely affect the public welfare.

“Spring” means a natural surface feature where ground water issues from the rock or soil onto the land or into a body of water.

“State Act” means the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., as amended.

“State-regulated contaminant” means a contaminant for which the Department has set MCL and monitoring requirements, independent of the National Regulations, as mandated by the State Act.

“Supplier of water” means any person who owns or operates a public water system.

“Surface water” means water at or above the land’s surface, which is neither ground water nor contained within the unsaturated zone, including, but not limited to, the ocean and its tributaries, all springs, streams, rivers, lakes, ponds, wetlands and artificial waterbodies.

“Third or subsequent offense” means a violation for which there are at least two prior similar violations.

“Unapproved water supply” means any source of water which is not part of a public community water system.

“Unconfined aquifer” means an aquifer that is either exposed to atmospheric pressure or bounded by layers of materials which do not serve as an effective barrier to water migration.

“Water system” means a system for providing potable water to any person.

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Changed N.J.A.C. references in the introductory paragraph; and in “Public water system”, rewrote the first sentence.

#### **7:10-1.4 Procedures for inspections and sanitary surveys of water systems**

(a) An authorized Department representative(s) may conduct an on-site inspection and/or sanitary survey of any water system, and any component part thereof, and may take samples, and inspect, copy or photograph any records required to be kept pursuant to this chapter.

(b) The Department representative(s) conducting an inspection or sanitary survey pursuant to (a) above shall carry identification, and shall present it upon request.

#### **7:10-1.5 Severability**

If any provision of this chapter or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications, and to this end, the provisions of this chapter are declared to be severable.

## SUBCHAPTER 2. GENERAL REQUIREMENTS

**7:10-2.1 Department inventory of public water systems**

(a) The Department, through the Bureau of Safe Drinking Water, shall at all times maintain a current inventory of all public water systems in the State, and all changes in said inventory shall be reported to the Administrator by January 1 of each year.

(b) Whenever a public water system is established or abandoned, the owner shall so notify the Department in writing.

**7:10-2.2 Department recordkeeping and reporting**

The Department, through the Bureau of Safe Drinking Water, shall keep such records, in such a manner, and for such times as shall be required under the National Regulations, 40 CFR 142.14, and shall submit each report to the Administrator and make each report available to the public as required under 40 CFR 142.15.

**7:10-2.3 Plan for the provision of potable water in emergencies**

The Department shall prepare and maintain, within the Bureau of Safe Drinking Water, a plan for the provision of safe drinking water under emergency circumstances. The Department shall review and update such plan as necessary.

**7:10-2.4 Reporting of changes to plants and emergencies**

(a) A supplier of water shall notify in writing the Bureau of Safe Drinking Water at least five working days prior to undertaking any planned change in the treatment plant or its operation that may either temporarily or permanently tend to lessen the quality of water furnished, or increase the likelihood of the delivery of water that does not meet the standards set forth in N.J.A.C. 7:10-5.

(b) A supplier of water shall notify the Department by telephone at (609) 292-5550 during business hours, or (609) 292-7172 during non-business hours, within six hours of the occurrence of any emergency that may tend to lessen the quality or pressure of delivered water, or increase the likelihood of delivery of water that does not meet the standards set forth in N.J.A.C. 7:10-5.

**7:10-2.5 Ban on further connections to over-extended or otherwise inadequate systems**

Whenever the Department determines that additional water service connections to any public water system may result in a degradation of service to existing users due to deficiencies in such public water system such as inadequate source, treatment, distribution or storage capacities, or inadequate pressure or volume, the Department may prohibit, by order, such additional connections. Upon receipt of such an order prohibiting additional water service connections, the supplier of water shall have 20 days to request a hearing

in writing in accordance with N.J.A.C. 7:10-3.5 on said order. At the hearing, the supplier of water has the burden of showing that the prohibition on additional connections should not be imposed.

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Inserted a reference to treatment in the first sentence.

**7:10-2.6 Program information**

Unless otherwise specified, any questions concerning the requirements of this chapter shall be directed to the Bureau of Safe Drinking Water, Water Supply Administration, New Jersey Department of Environmental Protection, PO Box 426, Trenton, NJ 08625-0426, (609) 292-5550. All forms referenced in these rules can be obtained from the Bureau.

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

**7:10-2.7 Managerial and technical competence of water systems**

(a) An existing water system which has undergone a change in status or ownership and/or is found by the Department to be in significant noncompliance with the State primary drinking water regulations shall, upon request, provide to the Department a demonstration of managerial capacity as provided in N.J.A.C. 7:10-13.4 and 13.6 and technical capacity as provided in N.J.A.C. 7:10-13.3 and 13.5.

1. Determinations made pursuant to this section with respect to a water system subject to the jurisdiction of the Division of Local Government Services within the Department of Community Affairs shall be made in consultation with the Director of that Division. Nothing in these rules shall infringe upon the regulatory jurisdiction of the Division of Local Government Services under N.J.S.A. 40A:1-1 et seq.

2. Determinations made pursuant to this section with respect to a public water system, which is a public utility subject to the jurisdiction of the Board of Public Utilities pursuant to N.J.S.A. 48:1-1 et seq., shall be made in consultation with the Board of Public Utilities. Nothing in these rules shall infringe upon the regulatory jurisdiction of the Board of Public Utilities under N.J.S.A. 48:1-1 et seq.

New Rule, R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

## SUBCHAPTER 3. CIVIL ADMINISTRATIVE PENALTIES AND REQUESTS FOR ADJUDICATORY HEARINGS

**7:10-3.1 Scope**

This subchapter governs the Department's assessment of civil administrative penalties and the issuance of orders for

the violation of any provision of the State Act or any regulation, rule, permit or order adopted or issued by the Department pursuant thereto. This subchapter shall also govern the procedure for assessment, settlement and payment of civil administrative penalties and for requesting an adjudicatory hearing on appeal from a notice of civil administrative penalty assessment or administrative order.

#### 7:10-3.2 Authority

(a) Whenever the Department finds that a person has violated any provision of the State Act, or any regulation, rule, permit, or order adopted or issued by the Department pursuant thereto, the Department may, singly or in combination, pursue the remedies specified in (a)1 through 4 below. Pursuit of any of the remedies specified under this section shall not preclude the Department from seeking any other remedy. The Department may:

1. Issue an order requiring the person found to be in violation to comply in accordance with N.J.A.C. 7:10-3.3;
2. Bring a civil action for injunctive and other relief in accordance with N.J.A.C. 7:10-3.9;
3. Levy a civil administrative penalty in accordance with N.J.A.C. 7:10-3.6 and/or 3.7; and/or
4. Bring an action for a civil penalty in accordance with N.J.A.C. 7:10-3.8.

#### 7:10-3.3 Procedures for issuing an administrative order pursuant to the State Act

(a) Whenever the Department finds that a person has violated any provision of the State Act, or any regulation, rule, permit, or order adopted or issued by the Department pursuant thereto, the Department may issue an order specifying the provision or provisions of the State Act, regulation, rule, permit, or order of which the person is in violation citing the action which constituted the violation, ordering abatement of the violation, and giving notice to the person of his or her right to a hearing on the matters contained in the order. The ordered party shall have 20 days from receipt of the order within which to deliver to the Department a written request for a hearing in accordance with N.J.A.C. 7:10-3.5. After the hearing and upon finding that a violation has occurred, the Department may issue a final order. If no hearing is requested, then the order shall become final after the expiration of the 20-day period. A request for hearing shall not automatically stay the effect of the order.

#### 7:10-3.4 Procedures for assessment, settlement and payment of civil administrative penalties for violations

(a) To assess a civil administrative penalty under the State Act, the Department shall notify the violator by certified mail (return receipt requested) or by personal service. This notice of civil administrative penalty assessment shall:

1. Identify the section of the State Act, rule, administrative order or permit violated;
2. Concisely state the alleged facts which constitute the violation;
3. Specify the amount of the civil administrative penalty to be imposed; and
4. Advise the violator of the right to request an adjudicatory hearing pursuant to N.J.A.C. 7:10-3.5.

(b) Payment of the civil administrative penalty is due upon receipt by the violator of the Department's final order in a contested case, or when a notice of civil administrative penalty assessment becomes a final order, as follows:

1. If no hearing is requested pursuant to N.J.A.C. 7:10-3.5, a notice of civil administrative penalty assessment becomes a final order on the 21st day following receipt of the notice of civil administrative penalty assessment by the violator;
2. If the Department denies the hearing request pursuant to N.J.A.C. 7:10-3.5(b), a notice of civil administrative penalty assessment becomes a final order on the 21st day following receipt of the notice of civil administrative penalty assessment by the violator;
3. If the Department denies the hearing request pursuant to N.J.A.C. 7:10-3.5(c), a notice of civil administrative penalty assessment becomes a final order upon receipt of notice of such denial; or
4. If the Department grants the hearing request, a notice of civil administrative penalty assessment becomes a final order upon receipt by the violator of a final order in a contested case.

(c) The Department may treat an offense as a first offense solely for the purpose of determining the civil administrative penalty under N.J.A.C. 7:10-3.6 or 3.7 if the violator has not committed the same offense in the three years immediately preceding the date of the pending offense.

(d) The Department may settle any civil administrative penalty assessed pursuant to N.J.A.C. 7:10-3.6 or 3.7 according to the following factors:

1. Mitigating or extenuating circumstances not previously considered in the notice of civil administrative penalty assessment pursuant to N.J.A.C. 7:10-3.6;
2. The timely implementation by the violator of measures leading to compliance not previously considered in the assessment of penalties pursuant to N.J.A.C. 7:10-3.6;
3. The nature, timing and effectiveness of measures taken to mitigate the effects of the violation or prevent future similar violations not previously considered in the notice of civil administrative penalty assessment pursuant to N.J.A.C. 7:10-3.6;

## SERIOUSNESS OF THE VIOLATION

TYPE OF WATER SYSTEM	Minor	Moderate	Major
Very small	\$5,000	\$7,500	\$10,000
Small	\$6,000	\$9,000	\$12,000
Medium	\$7,000	\$11,000	\$15,000
Large	\$8,000	\$15,000	\$22,000

(g) The Department may adjust the amount of any penalty assessed pursuant to (f) above based upon any or all of the factors listed in (g)1 through 5 below. No such factor constitutes a defense to any violation. In no case shall the assessed penalty be more than \$5,000 for each first offense, less than \$5,000 or more than \$10,000 for the second offense, and less than \$5,000 or more than \$25,000 for the third and each subsequent offense.

1. The frequency with which any violation of the State Act, rules, permit or order occurred;
2. The timely implementation by the violator of measures leading to compliance;
3. The nature, timing and effectiveness of measures taken to mitigate the effects of the violation or prevent future similar violations, and the extent to which such measures are in addition to those required under an applicable statute or rule;
4. The deterrent effect of the penalty; and/or
5. Any other mitigating, extenuating, or aggravating circumstances.

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (d)iv, inserted "primary" preceding "contaminant".

#### 7:10-3.7 Civil administrative penalty for failure to pay a fee

(a) The Department may assess a civil administrative penalty pursuant to this section against any person who fails to pay a fee when due pursuant to the State Act, or any regulation, rule or permit adopted or issued pursuant thereto.

(b) The amount of the civil administrative penalty for a violation pursuant to this section shall be in an amount equal to the unpaid fee or \$250.00, whichever is greater, up to a maximum of \$5,000 for the first offense; two times the unpaid fee or \$500.00, whichever is greater, up to a maximum of \$10,000 for the second offense; and three times the unpaid fee or \$750.00, whichever is greater, up to a maximum of \$25,000 for the third and each subsequent offense.

#### 7:10-3.8 Civil penalties for violations of the State Act

(a) Any person who violates the provisions of the State Act, any regulation, rule, permit, or order adopted or issued by the Department pursuant thereto, or an administrative order or a court order issued pursuant to the State Act, or who fails to pay a civil administrative penalty in full pursuant to N.J.A.C. 7:10-3.4(b), shall be subject, upon order of a

court, to a civil penalty of not more than \$10,000 for each violation, and each day during which a violation continues shall constitute an additional, separate, and distinct violation.

(b) Any penalty established pursuant to this section may be imposed and collected with costs in a summary proceeding pursuant to the Penalty Enforcement Law, N.J.S.A. 2A:58-1 et seq. The Superior Court shall have jurisdiction to enforce the provisions of the Penalty Enforcement Law in connection with the State Act.

#### 7:10-3.9 Civil actions for violations of the State Act

The Department may institute an action or proceeding in a court of competent jurisdiction for injunctive and other relief for any violation of the State Act, or any regulation, rule, permit or order adopted or issued by the Department pursuant thereto, and the court may proceed in the action in a summary manner.

### SUBCHAPTER 4. DISINFECTION

#### 7:10-4.1 Disinfection

(a) Except in accordance with (b) below, every supplier of water from a public community water system shall disinfect all water in accordance with the method and equipment requirements of N.J.A.C. 7:10-11.16 in order to ensure delivered water is of microbiologically safe quality.

(b) Except for public community water systems that use surface water source(s), the supplier of water from a water system that serves 100 or fewer dwellings or properties may elect not to disinfect its water, provided it increases the number of microbiological samples taken from its distribution system to a minimum of two samples per month at biweekly intervals.

(c) Notwithstanding (a) and (b) above, any supplier of water from any public community water system or public noncommunity water system may be required to disinfect its water if the Department determines that said water is microbiologically unacceptable.

(d) Any supplier of water from a public community water system that purchases treated water from another public water system on a regular or continuous basis may be required to re-disinfect said water if deemed necessary by the Department.

### SUBCHAPTER 5. STATE PRIMARY DRINKING WATER REGULATIONS

#### 7:10-5.1 Applicability of National Regulations

Except as provided in this subchapter, the Department adopts and incorporates herein by reference the National

Primary Drinking Water Regulations, as amended and supplemented, including all siting requirements, filtration and disinfection requirements, maximum contaminant levels, monitoring and analytical requirements, reporting requirements, public notification requirements and recordkeeping requirements, as the New Jersey primary drinking water regulations, applicable to all public water systems. The maximum contaminant levels and action levels in this subchapter shall, in addition, apply to nonpublic water systems, and shall be subject to monitoring requirements established by the appropriate administrative authority. Copies of the National Regulations may be obtained from either the Drinking Water Section of the Water Programs Branch, U.S. Environmental Protection Agency, 290 Broadway, New York, New York 10007-1861, (212) 637-3880; or the Bureau of Safe Drinking Water, Water Supply Administration, Department of Environmental Protection, PO Box 426, Trenton, New Jersey 08625-0426, (609) 292-5550.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
Rewrote the last sentence.

#### Case Notes

Federal regulations on primary drinking water adopted by the State; construction permit application denied due to anticipated nitrate production. *Andover Mobile Home Park v. Dept. of Environmental Protection*, 4 N.J.A.R. 420 (1981).

#### 7:10-5.2 Discretionary changes to National Regulations

(a) In accordance with the discretionary authority permitted by the National Regulations, for compliance with the State primary drinking water regulations, the following shall apply:

1. Surface water treatment requirements shall be those established under the National Regulations except as provided in N.J.A.C. 7:10-9.
2. Microbiological monitoring shall be undertaken as required under the National Regulations, except:
  - i. The Department will not reduce the microbiological sampling frequency to less than one sample per month for a public community water system serving 25 to 1000 persons; and
  - ii. The Department will not reduce the microbiological sampling frequency to less than one sample per quarter for a public noncommunity water system (transient or nontransient) using only ground water source(s) and serving 25 to 1000 persons.
3. Inorganics (IOCs) monitoring requirements and MCLs shall be those established under the National Regulations and at (a)7 below.
4. MCLs for volatile organic compounds (VOCs) shall be those established under the National Regulations and at N.J.A.C. 7:10-5.2(a)7 except as listed in Table 1, below, for State-regulated contaminants.

Table 1  
MCLs FOR STATE-REGULATED CONTAMINANTS

State-regulated contaminant	MCL (in $\mu\text{g/l}$ or ppb)
Benzene	1
Carbon tetrachloride	2
Chlorobenzene	50
1,3-Dichlorobenzene	600
1,2-Dichloroethane	2
1,1-Dichloroethylene	2
Methylene chloride	3
Tetrachloroethylene	1
Trichlorobenzene(s)	9
1,1,1-Trichloroethane	30
Trichloroethylene	1
Xylene(s)	1000
1,1-Dichloroethane	50
1,1,2-Trichloroethane	3
1,1,2,2-Tetrachloroethane	1
Naphthalene	300
Methyl tertiary butyl ether (MTBE)	70

i. As of January 1, 1997, monitoring requirements for all VOCs, including State-regulated contaminants, shall be those established under the National Regulations.

5. For public noncommunity water systems, monitoring requirements and MCLs for VOCs shall be those established under the National Regulations, except that the MCLs for State-regulated contaminants shall be those listed in Table 1 at (a)4 above.

6. MCLs for synthetic organic compounds (SOCs) and pesticides shall be those established under the National Regulations except for the State-regulated contaminant chlordane, for which an MCL of 0.5  $\mu\text{g/l}$  shall apply.

7. As required pursuant to 40 CFR 142.16, the monitoring period for each contaminant group, specifically, inorganics (except asbestos, nitrate and nitrite), volatile organic compounds and synthetic organic compounds, shall be as follows:

Monitoring Period	Water System Type
Year one of the three year Federal compliance period (that is, 1996, 1999, 2002)	All public community water systems (PCWS) using a surface water source(s) or all PCWS serving a population greater than 10,000.
Year two of the three year Federal compliance period (that is, 1997, 2000, 2003)	All public community water systems using a ground water source(s) serving a population equal to or less than 10,000.
Year three of the three year Federal compliance period (that is, 1998, 2001, 2004)	Public nontransient noncommunity water systems.

8. MCLs and monitoring requirements for disinfectants and disinfection by-products shall be those established under the National Regulations.

9. Action levels and monitoring requirements for lead and copper shall be those established under the National Regulations.

10. Subject to (a)10i below, MCLs and monitoring requirements for radionuclides shall be those established under the National Regulations.

i. Compliance with the MCL shall be individually determined at each sampling location including points of entry to the water distribution system, when individually directed by the Department, based on a running annual average of all quarterly sampling results from each of the sampling location.

11. The Department may allow monitoring waivers for public water systems pursuant to 40 CFR 141.23(c) and 141.24(f) and (h) of the National Regulations.

12. Subject to (a)12i below, suppliers of water from a bulk purchase system are subject only to the microbiological monitoring and lead and copper monitoring requirements of this section.

i. Effective January 1, 2004, a supplier of water from a bulk purchase system that regularly derives its water from another water system using a surface water source(s) and provides water to more than 100 service connections shall at a minimum collect a quarterly disinfection by-products sample from a point within the water distribution system with maximum residence time to be tested for Total Trihalomethanes (THM4) and Total Trihaloacetic Acids (HAA5) disinfection by-products.

(b) The National Regulations, at 40 C.F.R. 141.151, require each community water system to annually develop and deliver to its customers a Consumer Confidence Report (CCR) which provides information on the quality of the water delivered by the system and characterizes the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner. In addition to the standards and requirements in the National Regulations for the development and distribution of the CCR, the following requirements shall apply:

1. Notwithstanding the provisions of the Federal Safe Drinking Water Act amendments of 1996, 42 U.S.C. §§ 300f et seq. and the National Regulations, at 40 C.F.R. 141.155, every public community water system, regardless of the number of persons served, shall mail a copy of its Consumer Confidence Report to each of its customers.

<u>Contaminant</u>	<u>New Jersey MCL<sub>1</sub> (ppb)</u>	<u>MCL in CCR units</u>	<u>Major Sources in Drinking Water</u>	<u>Health Effects Language</u>
<i>meta</i> -Dichlorobenzene	600	\$600	Discharge from industrial chemical factories	Some people who drink water containing <i>meta</i> -Dichlorobenzene in excess of the MCL over many years could experience problems with their liver, kidneys or circulatory system.

2. The statement required pursuant to 40 C.F.R. 141.154(a) (Vulnerable Populations Statement) shall be included in bold print within the header of any chart displaying levels of detection and maximum contaminant levels for contaminants included in the Consumer Confidence Report.

i. If the Consumer Confidence Report does not contain at least one chart displaying levels of detection and maximum contaminant levels, the Vulnerable Populations Statement shall be placed at the beginning of the report.

3. In addition to the reporting requirements set forth at N.J.A.C. 7:10-7.4, if, at any time during any monitoring period within the reporting year, a sample collected and analyzed pursuant to N.J.A.C. 7:10-7.3 exceeds the recommended upper limit for iron, manganese or sodium as provided at N.J.A.C. 7:10-7.2, the following language shall be included in the Consumer Confidence Report:

i. "FOR IRON: The recommended upper limit for iron is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the recommended upper limit could develop deposits of iron in a number of organs of the body."

ii. "FOR MANGANESE: The recommended upper limit for manganese is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water."

iii. "FOR SODIUM: For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit may be of concern to individuals on a sodium restricted diet."

4. In addition to the contaminants regulated by the National Regulations, for which the Department has either adopted by reference the Federal MCL or has adopted a lower MCL, there are five additional contaminants regulated by the Department, at N.J.A.C. 7:10-5, but not regulated by the National Regulations. The Consumer Confidence Report shall include information concerning the five additional contaminants regulated in New Jersey as set forth below:

<u>Contaminant</u>	<u>New Jersey MCL<sub>1</sub> (ppb)</u>	<u>MCL in CCR units</u>	<u>Major Sources in Drinking Water</u>	<u>Health Effects Language</u>
1,1 Dichloroethane	50	50	Discharge from metal degreasing sites and other factories	Some people who drink water containing 1,1 Dichloroethane in excess of the MCL over many years could experience problems with their kidneys.
Methyl tertiary butyl ether (MTBE)	70	70	Leaking underground gasoline & fuel oil tanks, gasoline and fuel oil spills	Some people who drink water containing MTBE in excess of the MCL over many years could experience problems with their kidneys.
Naphthalene	300	300	Discharge from industrial chemical factories, exposure to mothballs	Some people who drink water containing Naphthalene in excess of the MCL over many years could experience problems with cataracts and hemolytic anemia.
1,1,2,2 Tetrachloroethane	1	1	Discharge from industrial chemical factories	Some people who drink water containing 1,1,2,2 Tetrachloroethane in excess of the MCL over many years could experience problems with their liver, kidneys and central nervous system.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a), rewrote 10 and 12.

Amended by R.2003 d.193, effective May 5, 2003.

See: 34 N.J.R. 4281(a), 35 N.J.R. 1925(b).

Added (b).

### 7:10-5.3 Analytical requirements

(a) The monitoring and analytical requirements for determining compliance with the maximum contaminant levels shall be those established under the National Regulations.

(b) Any analysis required under this chapter shall be conducted at a certified laboratory, certified in accordance with N.J.A.C. 7:18, for the specific analytical method used.

(c) Each analysis shall be conducted using a method capable of achieving an MDL below the MCL for the contaminant being analyzed.

(d) A supplier of water from a public community water system, when submitting any sample analysis to the Department, shall provide the following:

1. The test result for all contaminants tested for as part of the analytical method;
2. Any test result that exceeds a specified MDL; and
3. A description of the quality control procedures followed applicable to the analysis submitted.

### 7:10-5.4 Reporting requirements

(a) Except where a shorter reporting period is required by the National Regulations, each supplier of water shall submit a compliance sampling report to the Department within the first 10 calendar days of the month following the month in which any test, measurement or analysis is made. The compliance sampling report, containing the sampling results for microbiological contaminants, inorganic compounds, volatile organic compounds, synthetic organic compounds, radionuclides and lead and copper analyses, shall be prepared in a format prescribed by and on forms available from and submitted to, the Department at the following address:

Bureau of Safe Drinking Water  
Water Supply Administration  
New Jersey Department of Environmental Protection  
PO Box 426  
Trenton, New Jersey 08625-0426

(b) Within 180 days of receipt of written notification from the Department, each supplier of water shall ensure that all compliance sampling reports are submitted to the Department electronically in a manner compatible with Department's computer system either by diskette or by direct electronic transmission. Public water systems serving fewer than 3,300 persons shall be exempt from the requirement to submit sampling reports electronically.

(c) Each supplier of water from a public community water system shall report by telephone within 48 hours or on the next business day, whichever is sooner, to the Bureau of Safe Drinking Water at (609) 292-5550, the supplier's failure to comply with any primary drinking water regulation, including any failure to comply with any monitoring requirement pursuant to this subchapter. A supplier of water shall report any acute violation by telephone to the Department as soon as the supplier becomes aware of such acute violation.

(d) A supplier of water is not required to submit a compliance sampling report to the Department if the Department conducts the sampling and if the State laboratory performs the sample analysis and reports the results directly to the Department.

(e) Each supplier of water from a public community water system shall submit a monthly report consisting of the daily records maintained pursuant to N.J.A.C. 7:10-5.6 by the 10th day of the month following the month for which the records contained in the report are compiled.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (b), substituted "Within 180 days of receipt of written notification from the Department" for "Beginning on January 1, 1999" at the beginning.

#### 7:10-5.5 Public notification

(a) Each supplier of water shall provide public notification of any violation of any MCL or monitoring requirement in accordance with the National Regulations pursuant to 40 CFR 141.32.

(b) Any supplier of water from a public noncommunity water system which the administrative authority determines is not in compliance with any primary drinking water regulation, including any monitoring requirement, shall immediately post a notice of such failure in a place conspicuous to consumers in a format prescribed in the National Regulations pursuant to 40 CFR 141.32. The notice shall remain posted until the administrative authority determines that the system is restored to compliance.

#### 7:10-5.6 Recordkeeping

A supplier of water shall keep and maintain all records required under the National Regulations and also maintain daily records of water pumpage, quantities of chemicals used for water treatment and routine test results.

#### 7:10-5.7 Remediation requirements and procedures

(a) Except as provided pursuant to (b) below, the supplier of water that analyzes and reports pursuant to this subchapter any violation of a newly promulgated MCL for any of the contaminants regulated pursuant to this subchapter shall, within one year of receipt of the results of the tests conducted pursuant to the National Regulations and N.J.A.C. 7:10-5.2 that demonstrate such exceedance, take

any action necessary to bring the water into compliance with the applicable MCL.

(b) The Department may require by administrative order that the supplier of water take prompt action to bring the water into compliance with the applicable MCL upon a determination that such action is necessary to abate an immediate public health threat.

(c) The Department may extend the deadline by which the supplier of water must achieve compliance with the applicable MCL after a public hearing and its determination that the extension shall not pose an imminent threat to public health, if new construction of a treatment plant is required.

(d) If the supplier of water fails to take action to bring the water into compliance with the applicable MCL pursuant to (a) above, the Department may take one or more of the following actions:

1. Seek to enjoin the supplier of water from continuing to supply water to the public;
2. Establish a program to bring the public water system into compliance;
3. Provide the customers of the public water system with an alternate potable water supply; and/or
4. Seek penalties in accordance with N.J.A.C. 7:10-3.

## SUBCHAPTER 6. VARIANCES AND EXEMPTIONS

### 7:10-6.1 Variances

(a) The Department may grant to any public water system one or more variances from maximum contaminant levels upon a finding that:

1. Because of characteristics of the raw water sources, the system cannot meet a maximum contaminant level despite application of the best technology, treatment techniques, or other means, which the Department finds are generally available (taking costs into consideration); and
2. The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

(b) The Department may grant to any public water system one or more variances from any requirement of a specified treatment technique of an applicable national primary drinking water regulation upon a finding that such treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of such system, and that the granting of the variance or variances will not result in an unreasonable risk to the

health of the persons served by the system. A variance issued pursuant to this subsection shall be conditioned on such monitoring and compliance schedule as the Department may prescribe.

(c) A variance pursuant to this subchapter shall be granted only under conditions and in a manner which are no less stringent than those under which a variance may be granted under the Federal Act.

(d) A supplier of water seeking a variance pursuant to this subchapter shall submit a request in writing to the Department that includes the following information:

1. The nature and duration of the variance requested;
2. Relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of this chapter;
3. A full explanation and evidence of the best available treatment technology and techniques;
4. Economic and legal factors relevant to ability to comply;
5. Analytical results of raw water quality relevant to the variance request;
6. A proposed compliance schedule, including the date each step toward compliance will be achieved;
7. A plan for the provision of safe drinking water in the case of an excessive rise in the contaminant level for which the variance is requested;
8. A plan for additional interim control measures during the effective period of variance; and
9. A statement that the supplier of water will conduct monitoring and meet other requirements prescribed by the Department as a condition of the variance.

(e) The Department shall act on any variance request within 90 days of receipt of a request with complete information required pursuant to (d) above. In determining whether to grant a variance the Department will consider the following factors:

1. For a variance pursuant to (a) above from maximum contaminant levels due to the raw water source:
  - i. The availability and effectiveness of treatment methods for the contaminant for which the variance is requested; and
  - ii. Cost and other economic considerations such as implementing treatment, improving the quality of the raw water source, or using an alternate source.
2. For a variance pursuant to (b) above from treatment techniques deemed to be unnecessary to protect health:
  - i. Quality of the raw water source including water quality data and pertinent sources of pollution; and
  - ii. Source protection measures employed by the public water system.

#### 7:10-6.2 Exemptions

(a) The Department may grant to any public water system one or more exemptions from maximum contaminant levels or treatment technique requirements, or both, upon a finding that:

1. Due to compelling factors (which may include economic factors), the public water system is unable to comply with such maximum contaminant level or treatment technique;
2. The public water system was in operation on the effective date of such maximum contaminant level or treatment technique; and

3. The granting of the exemption will not result in an unreasonable risk to health.

(b) An exemption pursuant to this subchapter shall be granted only under conditions and in a manner which are no less stringent than those under which an exemption may be granted under the Federal Act.

(c) A supplier of water seeking an exemption pursuant to this subchapter shall submit a request in writing to the Department that includes the following information:

1. The nature and duration of exemption requested;
2. Relevant analytical results of water quality sampling of the system, including results of tests conducted pursuant to the requirements of this chapter;
3. Explanation of the compelling factors, such as time or economic factors, which prevent the supplier of water from achieving compliance;
4. A proposed compliance schedule, including the date when each step toward compliance will be achieved; and
5. Any other information believed to be pertinent by the requester.

(d) The Department shall act on any exemption request within 90 days of receipt of a request with complete information required pursuant to (c) above. In determining whether to grant an exemption, the Department will consider the following factors:

1. The need for construction, installation or modification of treatment equipment or systems;
2. The time needed to put into operation a new treatment facility to replace an existing system which is not in compliance with the applicable MCL or treatment technique; and
3. The economic feasibility of compliance with the applicable MCL or treatment technique.

#### 7:10-6.3 Disposition of variance or exemption request

(a) If the Department intends to deny a request for an exemption or variance submitted pursuant to N.J.A.C. 7:10-6.1 or 6.2, the Department shall so notify the applicant in writing and state the reason or reasons for the proposed denial. Such notice shall offer the requester the opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Department. The Department shall make its final determination on the request within 30 days of receipt of such additional information or argument. If no additional information is presented by the requester within the required time, the Department will thereafter deny the request.

(b) If the Department grants a variance or exemption, after satisfaction of the applicable public notice and hearing requirements pursuant to (c) and (d) below, the Department

shall notify the applicant by written order. Such order shall identify the variance or exemption, the facility covered, and the termination date. The order shall also contain the terms and conditions deemed appropriate, including interim control measures, requirements for monitoring, sampling, recordkeeping and reporting and any proposed compliance schedule.

1. The order granting a variance or an exemption from a maximum contaminant level pursuant to this subchapter shall provide that the variance or exemption will be terminated when the system comes into compliance with the applicable maximum contaminant level. The order shall also provide that the variance or exemption may be terminated by the Department upon a finding that the supplier of water has failed to comply with any requirements of a final schedule made applicable to the system pursuant to this section.

2. The order granting a variance from a specified treatment technique pursuant to this subchapter shall provide that the variance may be terminated by the Department at any time upon a finding that the nature of the raw water source is such that the specified treatment technique for which the variance was granted is necessary to protect the health of persons, or upon a finding that the supplier of water has failed to comply with monitoring and other requirements prescribed by the Department as conditions to the granting of the variance.

(c) Prior to issuing an order granting a variance or setting a compliance schedule for a variance or exemption, the Department shall provide public notice of its intent to grant the variance or set the compliance schedule, and shall provide an opportunity for any interested person to request a public hearing on the proposed variance or compliance schedule. Such notice may cover the granting of more than one variance or compliance schedule, if each is identified with specificity.

1. The public notice of opportunity for a public hearing on the proposed variance or compliance schedule for a variance or exemption shall:

- i. Be published in the New Jersey Register;
- ii. Be published in a newspaper of general circulation in the area served by the public water system.
- iii. Include a summary of the proposed variance or exemption compliance schedule; and
- iv. Include a statement that interested parties may request, in writing, a public hearing within 30 days after publication of the public notice. The notice shall state the address to which such request should be sent, and a statement that such request for a public hearing must include the name, address, and telephone number of the person or organization making the request, a short statement of the requester's interest in the matter and the information he or she intends to produce at the public hearing, and the requester's signature.

(d) The Department shall grant a request for a public hearing on a variance or compliance schedule for a variance or exemption when it determines, after reviewing the information presented in the request submitted pursuant to (c) above, that there is a reasonable likelihood of useful information being produced at a hearing.

1. If the Department grants a request for a public hearing on a proposed variance or compliance schedule, the Department shall give the public, the requester and the affected public water system notice of the hearing not less than 15 days prior to the scheduled date of the hearing. The Department shall publish notice of the public hearing in the same manner as it published the notice of the proposed variance or compliance schedule pursuant to (c) above.

2. A representative of the Department shall conduct the public hearing on the proposed variance or compliance schedule in an informal, orderly and expeditious manner and shall submit a report of the public hearing to the Commissioner or his or her designee for final determination.

(e) Within 30 days after a public hearing held pursuant to (d) above on a proposed variance or schedule of compliance for a variance or exemption, the Commissioner or his or her designee shall confirm, rescind or revise the proposed schedule as necessary and prescribe the final schedule of compliance which shall include:

1. Dates for attainment of each step toward compliance;
2. Where applicable, dates by which arrangement for an alternative raw water source or improvement to an existing source will be completed;
3. Dates of connection to an alternative raw water source;
4. Date by which final compliance is to be achieved; and
5. Description of control measures, including interim control measures, for each contaminant for which the variance or exemption is granted.

(f) If no public hearing is held pursuant to (d) above, a variance or exemption schedule of compliance for a variance or exemption proposed pursuant to (c) above shall become effective 30 days after the notice of opportunity for hearing was published pursuant to (c) above.

(g) An exemption shall become effective upon receipt by the supplier of water of the order granting the exemption pursuant to (b) above.

(h) The Department shall promptly notify the Administrator of all variances and exemptions granted. Such notification shall describe the reason(s) for the variance or exemption, state the bases for the findings the Department made in granting the variance or exemption, and document the need for the variance or exemption.

(i) If a supplier of water fails to meet a final schedule of compliance date, or fails to comply with any other condition of the variance or exemption issued pursuant to this section, the Department may terminate the variance or exemption and may seek applicable penalties pursuant to the State Act and N.J.A.C. 7:10-3.

Public Notice: Intent to enter into Administrative Consent Order with City of Bridgeton.

See: 32 N.J.R. 605(b).

Public Notice: Intent to enter into Administrative Consent Order with City of Vineland.

See: 32 N.J.R. 1873(b).

#### 7:10-6.4 Renewal of variances and exemptions

(a) The Department shall specify the duration of a variance or exemption in the order granting the variance or exemption issued pursuant to N.J.A.C. 7:10-6.3. The maximum duration of a variance is three years, including any renewal or renewals. Systems with fewer than 500 service connections may request a maximum of two consecutive two-year renewals.

(b) A supplier of water seeking to renew a variance or exemption shall submit a renewal request in writing at least six months prior to the expiration of the variance or exemption.

(c) The request for and disposition of a request for the renewal of a variance or exemption shall be made in accordance with procedures set forth at N.J.A.C. 7:10-6.1, 6.2 and 6.3.

#### 7:10-6.5 Requests for adjudicatory hearings

(a) A requester for a variance or exemption under N.J.A.C. 7:10-6.1 and 6.2, or any person subject to the limitation on third party appeal rights set forth in P.L. 1993, c.359 (N.J.S.A. 52:4B-3.1 through 3.3), who believes himself or herself to be aggrieved with respect to decisions made by the Department pursuant to this subchapter may contest the decision and request an adjudicatory hearing pursuant to Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq. and the New Jersey Uniform Administrative Procedure Rules, N.J.A.C. 1:1, in accordance with the appeal procedures set forth at N.J.A.C. 7:10-3.5.

**7:10-9.2 Discretionary changes to national surface water treatment requirements**

(a) In accordance with the discretionary authority permitted by the National Regulations, for compliance with the State primary drinking water regulations including surface water treatment requirements, the following shall apply:

1. Each supplier of water from a system that uses a surface water source or a ground water source under the direct influence of surface water must provide filtration treatment using a filtration method or methods as established under the National Regulations, 40 CFR 141.73. The Department shall grant exceptions to this requirement only for ground water sources that are determined to be under the direct influence of surface water pursuant to N.J.A.C. 7:10-9.3 and that meet the filtration avoidance criteria established under the National Regulations at 40 CFR 141.71 (a) and (b).

2. Prior to January 1, 2002, for each filtration plant which treats surface water or ground water under the direct influence of surface water, the filtered water turbidity level shall be less than or equal to 0.5 Nephelometric Turbidity Units (NTU) in at least 95 percent of each month's filter or plant effluent samples. This standard shall apply to all types of filtration treatments, including, but not limited to, conventional or direct filtration, slow sand filtration, and diatomaceous earth filtration. As provided in the National Regulations, 40 CFR 141.73, the Department may increase the turbidity standard for the filtered water for individual filtration plants to 1.0 NTU in 95 percent of each month's filter or plant effluent samples.

3. Effective January 1, 2002, for each filtration plant which treats surface water or ground water under the direct influence of surface water, the filtered water turbidity level shall be less than or equal to 0.3 Nephelometric Turbidity Units (NTU) in at least 95 percent of each month's filter or plant effluent samples. This standard shall apply to all types of filtration treatments, including, but not limited to, conventional or direct filtration, slow sand filtration, and diatomaceous earth filtration.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a), added "Prior to January 1, 2002," at the beginning and deleted "95 percent of" following "NTU in" in the last sentence of 2, and added 3.

**7:10-9.3 Determination of ground water sources to be evaluated for direct influence of surface water**

(a) Except as provided at (b) below, each supplier of water shall monitor each raw water source for pH, turbidity, temperature, conductivity, coliform bacteria and/or particulate matter, in accordance with N.J.A.C. 7:10-9.5, if the source meets any of the following criteria:

1. The source is an infiltration gallery, spring, cistern, radial well collector or dug well;

2. The raw water quality data for the source indicates the existence of one or more of the following in the raw water: fecal coliform bacteria, Giardia cysts, or other pathogenic organisms associated with surface water;

3. The source is a well which has less than 50 feet of casing;

4. The source is a well and the annular space between the oversized borehole and the well casing is not grouted;

5. The source is located less than 200 feet horizontally from any surface water body that holds or carries water continuously for at least 60 calendar days in any year, including, but not limited to, a stream, river, brook, lake, reservoir, impoundment, pond or creek; and/or

6. The source is less than 200 feet horizontally from a source of microbial contamination which may involve a ground water discharge, including but not limited to, a septic system, cesspool, feedlot, stormwater detention basin or point discharge of highway drainage.

(b) The monitoring required pursuant to paragraph (a) above shall not apply to the sources described at (a)5 and 6 above if the supplier of water demonstrates that such source draws water from a low risk formation as defined in N.J.A.C. 7:10-1.3.

(c) By June 30, 1997, each public community water system shall submit for each source that meets the criteria in (a) above a completed Checklist for Determination of Ground Water Status to the Bureau of Safe Drinking Water in the Department. Public noncommunity water systems shall submit the checklist upon the request of the Department, where, based upon a history of noncompliance with applicable coliform standards, use of disinfectant treatment, and other physical evidence revealed by inspection, the Department determines that the system's ground water source may be at risk of contamination by surface water.

1. The Checklist shall specify the identification, location, construction, and microbiological quality of each source.

2. Any Checklist properly completed and submitted to and received by the Department prior to November 18, 1996 will be considered as complying with this subsection.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Rewrote (c).

**7:10-9.4 Monitoring requirements and criteria for determination for ground water sources under the direct influence of surface water**

(a) Each supplier of water that has a ground water source that meets any of the criteria in N.J.A.C. 7:10-9.3(a) shall monitor that source for a period of one year from the date of receipt of notice of such determination made pursuant to N.J.A.C. 7:10-9.3 using the procedures set forth in (b) below.

(b) During the one-year monitoring period established pursuant to (a) above, the supplier of water shall monitor the ground water source according to the sampling scheme below:

1. The supplier of water shall collect precipitation data and sample the raw water source in four series of six weekly tests, with the series separated by at least 30 calendar days and one of the series performed during the period of peak production for the source, for all of the following physical/chemical parameters:

- i. pH;
- ii. Temperature;
- iii. Turbidity;
- iv. Conductivity; and

v. Total coliform bacteria (if a sample result is positive for total coliform, the water shall be tested for fecal coliform or *E. coli*).

2. The supplier of water shall sample the raw water source for particulate matter using Microscopic Particulates Analysis (MPA) as set forth in the U.S. Environmental Protection Agency's "Guidance Manual for Compliance with the Filtration and Disinfection Requirements For Public Water Systems Using Surface Water Sources" (dated March, 1991). A minimum of four particulate analyses shall be performed during the one-year monitoring period. The sampling shall be conducted immediately following significant precipitation events and/or during the period of peak production for the source and shall be separated by at least 60 calendar days. The analyses shall determine the presence, if any, of the following:

- i. Diatoms;
- ii. Rotifers;
- iii. Coccidia;
- iv. Insect parts and larvae;
- v. Cryptosporidium; and
- vi. Giardia cysts.

(c) If the sampling results for the physical/chemical parameters listed in (c)1 through 5 below show significant variation during the course of the one-year monitoring period established pursuant to (a) above, the supplier of water shall switch to particulate matter monitoring as described in (b)2 above for the remainder of the one-year monitoring period. If the supplier of water does not switch to particulate matter monitoring, then the raw water source will be considered by the Department to be "under the direct influence of surface water" and subject to the filtration and disinfection requirements of this subchapter. The Department considers the following variations to be "significant" for purposes of this subsection:

1. The turbidity of the raw water source fluctuates more than 0.5 NTU over the course of any one month;
2. The turbidity of the raw water source exceeds 1.0 NTU at any time;
3. The temperature of the raw water source fluctuates in excess of five degrees Fahrenheit over the course of any one month or in excess of 15 degrees Fahrenheit over the course of one year;
4. The pH, conductivity, or temperature of the raw water source varies by more than 20 percent of the annual average during any one month; or
5. Fecal coliform bacteria occur in the raw water source.

(d) Except as provided at (c) above, only the presence of rotifers, diatoms, coccidia, insect parts and larvae, fecal coliform or *E. coli* bacteria, *Cryptosporidium*, and/or *Giardia* cysts in the raw water source will be considered by the Department as indicative of direct surface water influence.

(e) Each well in a wellfield shall be individually monitored pursuant to this section, even if all the wells discharge into a common header, unless physical circumstances prevent such individual monitoring.

(f) A sampling report, including the raw water monitoring results in tabular form and a written description of the monitoring results, shall be submitted to the Department within 30 calendar days after the completion of monitoring conducted pursuant to this section. The report shall be sent to:

Bureau of Safe Drinking Water  
New Jersey Department of Environmental Protection  
PO Box 426  
Trenton, New Jersey 08625-0426

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

#### **7:10-9.5 Surface water treatment plant reporting requirements**

(a) Each supplier of water that uses a surface water source shall submit the following documentation to the Department:

1. For treatment plants with a capacity of less than 10 MGD, the "Bureau of Safe Drinking Water Surface Water Treatment Plant Survey," which includes a process schematic drawing of the treatment plant, and detailed information on contact basins, filters and disinfectant, shall be submitted to the address noted in N.J.A.C. 7:10-9.4(f) by March 30, 1997. For treatment plants with a capacity of less than 10 MGD that do not meet the filtration and disinfection treatment requirements established under the National Regulations, 40 CFR 141.73, as determined by the Department based on information submitted in the Survey, the supplier of water may have the plant evaluated pursuant to (a)2 below in order to demonstrate compliance with this subchapter.

2. For existing treatment plants with a capacity greater than or equal to 10 MGD, the tracer study evaluation report prepared as recommended in the U.S. Environmental Protection Agency's "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources" (dated March 1991) as amended and supplemented, shall be submitted to the address noted in N.J.A.C. 7:10-9.4(f) by June 30, 1997. The tracer study evaluation must be performed by either a New Jersey licensed professional engineer who is familiar with water filtration and disinfection treatment design or the water treatment system operator licensed pursuant to N.J.A.C. 7:10-13.

3. For new water treatment plants with a capacity greater than or equal to 10 MGD, the tracer study evaluation report shall be submitted within one year of commencement of operation of the plant.

#### 7:10-9.6 Additional requirements

(a) Each supplier of water with an existing surface water filtration plant shall install a continuous analyzer/recorder to monitor the turbidity of the combined filter effluent or plant effluent by June 30, 1997 and shall install a continuous analyzer/recorder to monitor the turbidity of the effluent from each individual filter by December 31, 2000.

(b) The supplier of water shall verify the accuracy of performance of each analyzer/recorder required pursuant to (a) above by taking a grab sample of the effluent at least once in every 24-hour period. In the case of analyzer/recorder failure, the supplier of water shall take a grab sample at least once every four hours during the period in which the analyzer/recorder is out of service.

(c) Each supplier of water shall establish and maintain on-site written routine operating procedures for minimizing initial turbidity peaks that occur after filter backwashing.

(d) Any filter removed from service for longer than one week shall be backwashed prior to being placed back into service in order to remove microbiological buildup.

(e) Each supplier of water that uses conventional filtration treatment or direct filtration shall continuously apply a coagulant while the treatment plant is in operation.

(f) For the purpose of complying with the minimum total removal/inactivation requirements of the National Regulations, 40 CFR 141.70, the following total minimum removal/inactivation requirements for disinfection shall apply:

1. For treatment plants that use conventional filtration treatment, the supplier of water shall provide sufficient disinfection to achieve a minimum of 0.5-log (68 percent) inactivation of *Giardia* cysts and a 2-log (99 percent) inactivation of viruses.

2. For treatment plants that use direct filtration, slow sand filtration and diatomaceous earth filtration, the sup-

plier of water shall provide sufficient disinfection to achieve a minimum of 1-log (90 percent) inactivation of *Giardia* cysts and a 3-log (99.9 percent) inactivation of viruses.

3. For treatment plants that use filtration technologies other than those specified in (f)1 and 2 above, the Department will determine the minimum disinfection requirements on a case-by-case basis.

(g) The Department may modify the minimum removal/inactivation requirements for disinfection set forth in (f) above if it determines that the removal efficiency of a filtration plant exceeds or is less than optimum based on the results of filtration efficiency studies, conducted at the treatment plant by the supplier of water, that indicate log inactivation of *Giardia* and viruses.

(h) Each supplier of water shall install a continuous analyzer/recorder on each filtration plant to monitor the disinfectant residual entering the distribution system. The supplier of water shall verify the accuracy of the performance of each analyzer/recorder by taking a grab sample of disinfectant residual at least once in every 24-hour period. In the case of analyzer/recorder failure, the supplier of water shall take a grab sample at least once every four hours during the period in which the analyzer/recorder is out of service.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a), rewrote the last sentence.

## SUBCHAPTER 10. PHYSICAL CONNECTIONS AND CROSS CONNECTION CONTROL BY CONTAINMENT

### 7:10-10.1 Purpose and scope

(a) This subchapter establishes the permit, design, and testing requirements of a backflow prevention device at facilities with physical connections between public community water systems and facilities which have sources of water which may be contaminated or of questionable or unknown quality over which the supplier of water has little or no control for the purpose of protecting the public community water system from backflow from such waters. This subchapter also establishes a framework for a public community water system to implement a cross-connection control program that would require the installation of a containment backflow prevention device at facilities with cross-connection hazards as outlined in N.J.A.C. 7:10-10.9.

(b) The requirements of this subchapter apply in conjunction with the requirements of the Plumbing Subcode of the New Jersey State Uniform Construction Code, N.J.A.C. 5:23-3.15, for the prevention of illegal plumbing cross-

connections, and with any other state or local requirements for the practice or procedure known as "cross-connection control by containment" whereby a backflow prevention device may be required to protect a public community water system from contamination as a result of plumbing cross-connections, or any other cross-connections.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
Rewrote (a).

### 7:10-10.2 General provisions and prohibitions

(a) Except as provided in (e) below, each owner of a facility containing an unapproved water supply shall obtain a physical connection permit pursuant to N.J.A.C. 7:10-10.5 for an approved physical connection installation and shall install such installation in accordance with the requirements of this subchapter as follows:

1. At each connection between a public community water system and any unapproved water supply; and/or
2. Where dual but physically separate water lines from a public community water system and from an unapproved water supply are located within the same building, including fire service lines.

(b) An approved physical connection installation shall be installed in accordance with this subchapter on each pipe conveying water from the public community water system into a facility supplied with water in the manner described in (a)2 above, including fire service lines.

(c) An authorized representative of the Department, administrative authority or the owner of the public community water system, who shall produce proper identification upon request, may enter a facility where an unapproved water supply is (or suspected to be) located during regular business hours for the purpose of conducting an inspection and/or test of an approved physical connection installation, or investigating a suspected violation of this subchapter, or verifying information submitted to the Department pursuant to this subchapter.

(d) Any holder of a current physical connection permit may, at his option, use a certified tester selected from the most current list of certified testers supplied by the certifying agency to the Department pursuant to N.J.A.C. 7:10-10.8(f) for the purpose of performing quarterly pressure tests and inspections of backflow prevention devices pursuant to N.J.A.C. 7:10-10.6.

(e) The requirements of N.J.A.C. 7:10-10.3 through 10.7 do not apply to physical connection installations in private residences. A physical connection installation shall not be installed in a private residence except as follows:

1. The licensed operator of the public community water system approves the installation and verifies that:

- i. No portion of the potable water plumbing system of the private residence is interconnected with an unapproved water supply (for example, private residence well); and

- ii. A reduced pressure zone backflow preventer assembly, a double check valve assembly, or similar backflow prevention device is installed on the public community water system service line. The supplier of water shall determine the type of device that must be installed.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a)1, deleted "physical" preceding "connection" and substituted "and/or" for "and".

### 7:10-10.3 Approved physical connection installation requirements

(a) An approved physical connection installation shall be either a double check valve assembly or a reduced pressure zone backflow preventer assembly, as defined at N.J.A.C. 7:10-1.3, designed and constructed in accordance with the requirements of this subchapter.

(b) The approved physical connection installation shall be a reduced pressure zone backflow preventer assembly when the unapproved water supply is a non-potable water source or a source in which contaminant levels measured pursuant to the State primary drinking water regulations at N.J.A.C. 7:10-5 exceed the maximum contaminant levels specified therein.

(c) The requirements of (b) above shall not apply to any physical connection installation operated under a current physical connection permit issued before November 18, 1996 until such time as the existing physical connection is replaced or modified.

(d) Each backflow prevention device used in an approved physical connection installation shall be constructed as follows:

1. For devices up to and including two inches in diameter, the double check valve assembly or the reduced pressure zone backflow preventer assembly shall be of durable, non-toxic plastic, or of all stainless steel, all bronze, or all brass construction;
2. For devices larger than two inches in diameter, the double check valve assembly or the reduced pressure zone backflow preventer assembly shall be constructed as described in (d)1 above or shall be constructed of cast iron or steel, lined with brass, bronze, epoxy resin, stainless steel, or other durable nontoxic, non-corrodible material acceptable to the Department;

3. The clappers, discs or poppets, hinges, bushings, and seatings of the check valve assemblies in any device used for an approved physical connection installation shall be constructed of brass, bronze, stainless steel or non-toxic plastic, and shall be so designed and installed as to be readily replaceable;

4. Facing rings of the clappers, poppets or discs, or differential relief valves shall be composed of durable molded natural rubber, synthetic rubber or neoprene, shall be of even thickness, smoothfaced, water-absorption resistant and shall provide a positive seal against the backflow of water through the device;

5. Every double check valve assembly and reduced pressure zone backflow preventer assembly shall have test cocks installed to facilitate the pressure testing required pursuant to N.J.A.C. 7:10-10.6;

6. Every backflow prevention device up to two inches in diameter shall be installed with full port ball type shutoff valves. For backflow prevention devices that are larger than two inches in diameter, shutoff valves of the ball valve type are recommended; and

6. Every backflow prevention device up to two inches in diameter shall be installed with full port ball type shutoff valves. For backflow prevention devices that are larger than two inches in diameter, shutoff valves of the ball valve type are recommended. Strainers installed upstream of the leading shutoff valve are recommended for all backflow prevention devices regardless of sizes; and

7. The pipe conveying water from the differential relief port of a reduced pressure zone backflow preventer assembly shall allow an air gap between the assembly and the drain pipe, and the pipe shall be of the same diameter as, or larger than, the relief port.

(e) All approved physical connection installations shall meet the following operating conditions:

1. The turbulence in the backflow prevention device shall not be excessive for flow rates up to the rated flow so as not to interfere with proper operation of the device;

2. All moving parts shall be designed to operate up to the rated flow in a positive manner without chatter;

3. The backflow prevention device shall not cause water hammer, nor be adversely affected by water hammer arising from an outside condition; and

4. The backflow prevention device shall not permit leakage in a direction reverse to normal water flow.

(f) In addition to the operating conditions set forth at (e) above, all double check valve assemblies shall, under normal flow conditions, operate so that the independently operating check valves remain closed until there is a demand for water. Each of the check valves in series must maintain a minimum of one psi pressure differential in the direction of flow. If, at any time, pressure downstream of the device

increases to within one psi of supply pressure, both check valves must close to prevent backflow.

(g) In addition to the operating conditions set forth at (e) above, all reduced pressure zone backflow preventer assemblies shall, under normal flow conditions, operate so that both check valves are open and the pressure area between the check valves, called the zone, is at least five psi lower than the supply pressure. The relief valve, within the zone, is held shut by supply pressure acting through an internal sensing passage on the relief valve diaphragm. The first check valve in the line of flow must maintain a minimum pressure differential of five psi and the second check valve in the line of flow must maintain a minimum pressure differential of one psi. If the first or second check valve becomes fouled, the pressure in the zone will increase causing the relief valve in the zone to open automatically and discharge to the atmosphere in order to maintain a pressure in the zone which is at least two psi lower than the supply pressure, thus preventing backflow.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Rewrote (b); and in (d)6, added a third sentence.

#### 7:10-10.4 Installation

(a) The approved physical connection installation shall be installed on the customer's side of the water meter on the pipe(s) conveying the water from the public community water system into a facility, shall be installed as close to the meter as is reasonably practicable, and shall be prior to any other connection, unless such other connection is also protected by means of an approved physical connection installation. For a fire service line, the approved physical connection installation shall be installed prior to the alarm check and siamese connection.

(b) The approved physical connection installation shall be installed so as to allow easy access, with adequate space for maintenance, inspection, and testing. No part of the device shall be submerged or subjected to freezing temperatures unless such part is thermally protected.

(c) The approved physical connection installation shall not be installed in a pit or vault.

1. This subsection shall not apply to any physical connection installation operated under a current physical connection permit issued before November 18, 1996 until such time as the existing physical connection installation is replaced or modified.

(d) Unless specifically designed for installation in a vertical position, any device used as an approved physical connection installation shall be installed in the horizontal position. Devices specifically designed for vertical installation shall be installed in an up-feed position.

(e) There shall be no bypass around any approved physical connection installation unless such bypass is also protected by an approved physical connection installation.

(f) When a physical connection installation is proposed for a facility whose supply of water from the public community water system cannot be interrupted for testing and/or maintenance, a redundant backflow prevention device shall be provided at the facility.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
Added (f).

#### 7:10-10.5 Physical connection permit application and renewal procedures

(a) Initial physical connection permit regulations are as follows:

1. Prior to the installation of a physical connection, the owner of the facility where the installation is to be made shall submit to the Department and to the owner of the public community water system a completed application form for an initial physical connection permit. The application form may be obtained from the Department at the Bureau of Safe Drinking Water, PO Box 426, Trenton, New Jersey 08625-0426.

2. The initial physical connection permit application form includes the following information:

- i. The facility name, location and municipality;
- ii. The facility owner's name, address and telephone number;
- iii. The name of the public community water system;
- iv. The name of the administrative authority;
- v. The source of the unapproved water supply;
- vi. The uses of the public community water system water and the unapproved water supply;
- vii. The type of operation conducted at the facility;
- viii. The type and size of backflow prevention devices and service connections from the public community water system;
- ix. A certification by the owner of the facility that the proposed installation complies with the requirements of this subchapter; and
- x. As an attachment, a drawing showing the facility layout with street locations, location of any unapproved water supply, all service connections from the public community water system, location of backflow prevention device(s) and sufficient longitudinal and transverse sections to adequately explain the installation.

3. The Department and the owner of the public community water system shall review the application and notify the owner of the facility in writing if the proposed physical connection installation meets the requirements of this subchapter.

4. Upon receipt of the notification from the Department and the owner of the public community water system pursuant to (a)3 above, the owner of the facility shall ensure that the physical connection installation is installed in accordance with the application approved pursuant to this section.

5. Upon completion of the physical connection installation, the owner of the facility shall contact the owner of the public community water system, the Department, and the administrative authority to arrange for the initial inspection and pressure testing of the physical connection installation in accordance with N.J.A.C. 7:10-10.6. The pressure test results shall be recorded on the Quarterly Physical Connection Test and Maintenance Report form.

6. Upon completion of the inspection and pressure testing of the device pursuant to (a)5 above, the authorized representatives of the public community water system, the administrative authority and the Department shall complete the Certification of Inspection and Testing Results form obtained from the Department.

7. The owner of the facility shall obtain the Certification of Inspection and Testing Results form completed in accordance with (a)6 above and submit the completed certification to the Department.

8. The Department shall review the application and results of the inspection and pressure testing conducted and certified pursuant to (a)5 and 6 above, and shall notify the owner of the facility, the supplier of water, and the administrative authority in writing of its decision to issue a physical connection permit or to deny the application. If an application is denied, the Department shall state the reason(s) for the denial.

(b) Permit renewal rules are as follows:

1. Prior to the expiration of a permit, the Department shall mail a Physical Connection Permit Renewal application form to each holder of a current physical connection permit issued pursuant to this subchapter.

2. The Physical Connection Permit Renewal application form includes the following information:

- i. The physical connection permit number;
- ii. The facility name, location and municipality;
- iii. The facility owner's name, address and telephone number;
- iv. The facility owner's signature;
- v. The number, type and size of device(s) permitted;

vi. A record of the dates of quarterly pressure tests and internal inspections; and

vii. Either certifications from the supplier of water and/or the administrative authority that the backflow prevention device(s) was functioning satisfactorily at the time of the tests, if the administrative authority and/or the supplier of water representative was present during the tests or certification from the certified tester through submission of the Quarterly Physical Connection Test and Maintenance Report recommending that the physical connection permit be renewed for one year.

3. Upon completion of the inspection and pressure testing of the existing installation, the permit holder shall obtain the certification of the authorized representative of the administrative authority and/or the owner of the public community water system as to the results of the inspection and quarterly pressure tests recorded on the Quarterly Physical Connection Test and Maintenance Report form if the administrative authority and/or the supplier of water's representative was present during the tests.

4. The permit holder shall submit the completed Physical Connection Permit Renewal application form to the Department, along with the completed Quarterly Physical Connection and Maintenance Report forms for the preceding year required by N.J.A.C. 7:10-10.6.

5. The Department shall review the completed Physical Connection Permit Renewal application form and results of the inspection and pressure testing conducted pursuant to (b) 3 and 4 above, and shall notify the applicant-owner of the facility in writing of its decision to renew the physical connection permit or deny the application. If an application is denied, the Department shall state the reason(s) for the denial.

(c) Each physical connection permit issued or renewed pursuant to this section shall expire March 31 of each year, unless otherwise specified in the permit.

(d) Each applicant for an initial physical connection permit or physical connection permit renewal pursuant to this section shall pay the applicable fee set forth at N.J.A.C. 7:10-15.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
Rewrote (b)2vii.

#### **7:10-10.6 Inspection and testing requirements and procedures for physical connection installations**

(a) Each physical connection installation shall be inspected and tested as follows:

1. A test for tightness under prevailing pressure conditions shall be conducted as required pursuant to N.J.A.C. 7:10-10.5(a) for an application for an initial physical

connection permit and at least once every three months under an existing physical connection permit pursuant to N.J.A.C. 7:10-10.5(b).

2. An internal inspection shall be conducted within six months prior to the submission of an application for permit renewal pursuant to N.J.A.C. 7:10-10.5(b) and, after reassembly, the owner of the facility shall test the backflow prevention device for tightness to ensure the integrity of the device. An internal inspection shall consist of the dismantling of a double check valve assembly or a reduced pressure zone backflow preventer assembly to visually inspect the integrity of the internal mechanism including the clappers, discs, and facing rings.

3. The Department shall approve a reduction in the frequency of the pressure tests conducted pursuant to (a)1 above if the owner of the facility in which the physical connection installation is located demonstrates to the Department that the facility is not in operation during any time in a calendar quarter.

4. A reduced pressure zone backflow preventer assembly shall not be subject to the internal inspection requirement of (a)2 above except for routine maintenance as specified by the manufacturer, or for investigation of a malfunction, or as specifically required by the supplier of water.

(b) The inspection and testing required pursuant to (a) above shall be conducted either by an authorized representative of the owner of the facility where the backflow prevention device is installed in the presence of an authorized representative of the administrative authority and/or the supplier of water, or by a certified tester who holds a valid backflow prevention device tester certificate issued by a certifying agency approved by the Department pursuant to N.J.A.C. 7:10-10.8.

1. The owner of the facility may only select certified testers from the most current list of certified testers supplied by the certifying agency to the Department pursuant to N.J.A.C. 7:10-10.8(f).

2. The administrative authority and/or the supplier of water may require that an authorized representative of the administrative authority or supplier of water be present to witness the inspection and tests conducted by a certified tester.

3. If the tests and inspections are performed by a certified tester, the owner of the facility shall mail copies of the Quarterly Physical Connection Test and Maintenance Report to the administrative authority and to the supplier of water within five days of conducting the tests and inspections. The Quarterly Physical Connection Test and Maintenance Report form may be obtained from the Department at the Bureau of Safe Drinking Water, PO Box 426, Trenton, New Jersey 08625-0426.

(c) Any test of a physical connection installation conducted by an authorized representative of the Department as part of an investigation or inspection pursuant to N.J.A.C. 7:10-10.2 or any other provision of this chapter shall not be considered as a substitute for the inspection and testing required pursuant to (a) above.

(d) The procedures for testing a double check valve assembly are as follows (see Figure 1 in Appendix B):

1. Utilizing the differential pressure gauge and not shutting off number 1 shut-off valve.

i. Step 1—Test number 1 check valve as follows:

(1) Verify that the number 1 shut-off is open and number 2 shut-off valve is closed;

(2) Connect the high hose to test cock number 2;

(3) Connect the low hose to test cock number 3;

(4) Open test cocks 2 and 3;

(5) Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve after high hose bleeding is completed;

(6) Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve after low hose bleeding completed;

(7) Record the differential gauge pressure reading. It should be a minimum of 1 psi; and

(8) Shut off test cocks 2 and 3 and disconnect the hoses.

ii. Step 2—Test number 2 check valve as follows:

(1) Connect the high hose to test cock number 3;

(2) Connect the low hose to test cock number 4;

(3) Open test cocks number 3 and 4;

(4) Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve after high hose bleeding is completed;

(5) Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve after low hose bleeding is completed;

(6) Record the differential gauge pressure reading. It should be a minimum of one psi; and

(7) Shut off test cocks 3 and 4 and disconnect the hoses.

iii. Step 3—To check tightness of number 2 shut-off valve, both the number 1 and number 2 check valves shall be tight and holding a minimum of one psi. Also, little or no fluctuation of inlet supply pressure can be tolerated. The testing is performed as follows:

(1) Connect the high hose to test cock number 2;

(2) Connect the low hose to test cock number 3;

(3) Open test cocks numbers 2 and 3;

(4) Open high side bleed needle valve on test kit bleeding the air from the high hose. Close the high side bleed needle valve after bleeding of the high hose is completed;

(5) Open low side bleed needle valve on test kit bleeding the air from the low hose. Close the low side bleed needle valve after bleeding of the low hose is completed;

(6) Record the differential gauge pressure reading. It should be a minimum of one psi;

(7) Connect the bypass hose to test cock number 4 and open test cock number 4;

(8) Open the high side control needle valve and the bypass hose control needle valve on the test kit. (This supplies high pressure water downstream of check valve number 2);

(9) Close test cock number 2. (This stops the supply of high pressure water downstream of number 2 check valve). If the differential pressure gauge holds steady, the number 2 shut-off valve may be recorded as being tight. If the differential pressure gauge drops to zero, the number 2 shut-off valve shall be recorded as leaking.

(A) With a leaking number 2 shut-off valve, the device is, in most cases, in a flow condition, and the previous test readings taken from Step 1 and Step 2 are invalid. Unless a non-flow condition can be achieved, either through the operation of an additional shut-off downstream, or the use of a temporary compensating by-pass hose, accurate test results will not be achieved. The tester shall retest until valid results are achieved.

iv. This completes the standard field test for a double check valve assembly. Prior to removal of the test equipment, the tester should ensure that the number 2 shut-off valve is opened, thereby reestablishing flow and the test kit drained of water.

(e) The procedures for testing a reduced pressure zone backflow preventer assembly are as follows:

1. Install test equipment as shown in Figure 2 in Appendix B.

APPENDIX B

Figure 1—Double Check Value Assembly

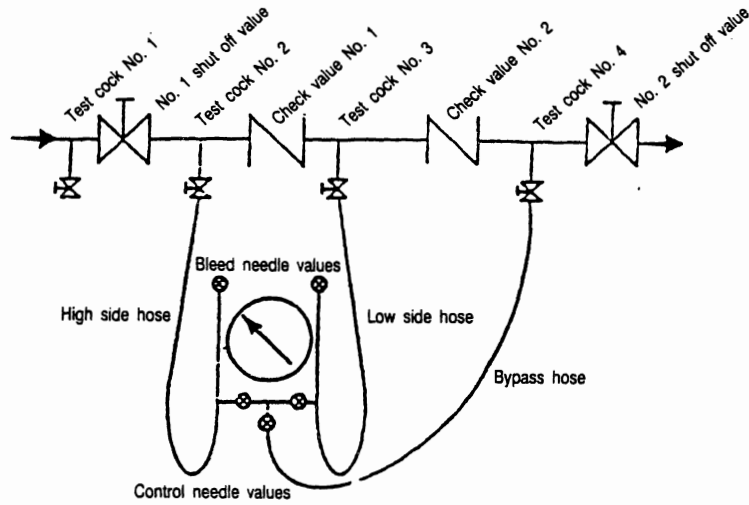


Figure 2—Reduced Pressure Zone Backflow Preventer Assembly (RPZ)

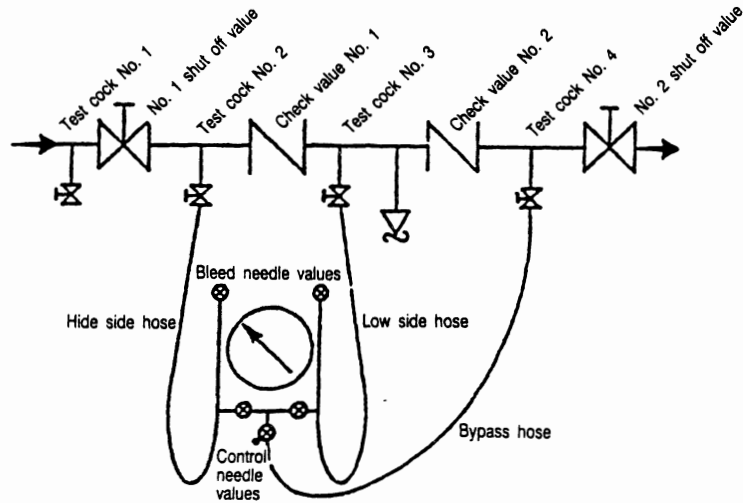
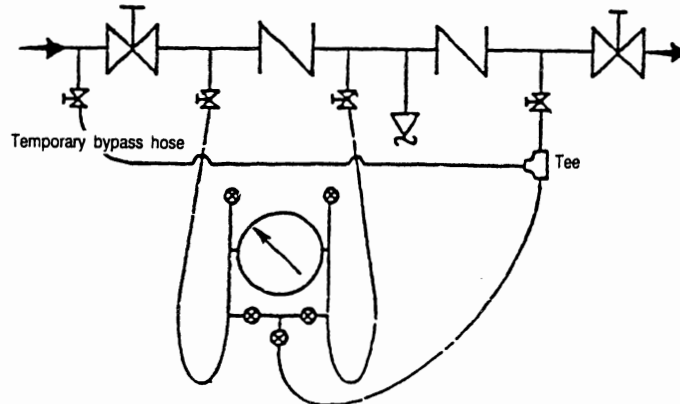


Figure 2A—RPZ Temporary Bypass for Leaking No. 2 Shut Off Value



## SUBCHAPTER 11. STANDARDS FOR THE CONSTRUCTION OF PUBLIC COMMUNITY WATER SYSTEMS

### 7:10-11.1 Purpose and scope

This subchapter establishes the permit requirements and standards for the design and construction of new or modified public community water systems.

### 7:10-11.2 Penalties

Violation of any provision of this subchapter may subject the owner of a public community water system to an enforcement action and penalty in accordance with the State Act and N.J.A.C. 7:10-3.

### 7:10-11.3 Deviations from construction standards

(a) The Department shall issue a permit to construct a public community water system that deviates from the standards and requirements of this subchapter if the permit applicant establishes that the proposed public community water system provides adequate protection of the water system's water supply as defined at N.J.A.C. 7:10-11.4. The Department shall review such a permit application using a conservative evaluation of data submitted by the applicant pursuant to (b) below.

(b) An applicant for a permit to construct a public community water system that deviates from the standards and requirements of this subchapter shall submit analytical and survey determinations which demonstrate either of the following:

1. That source of water supply is adequately protected by natural means; or
2. That of a comparable water system or pilot plant has been operated or for a period of time sufficient to demonstrate that adequate protection of the water supply.

### 7:10-11.4 Additional definitions and general provisions

(a) In addition to the words and terms defined at N.J.A.C. 7:10-1.3, the following terms are defined for the purposes of this subchapter:

1. "Adequate protection" means construction methods which ensure that the water that reaches consumers complies continuously with the physical, chemical, and bacteriological requirements of the State Primary Drinking Water Regulations at N.J.A.C. 7:10-5. The term "adequately protected" shall be construed accordingly.
2. "Dechlorination" means the partial or complete removal of residual chlorine by any chemical or physical process.
3. "Firm capacity" means adequate pumping equipment and/or treatment capacity (excluding coagulation, flocculation and sedimentation) when the largest pumping or treatment unit is out of service.

4. "Major pollutant source" means any wastewater treatment plant discharge, any documented ground water contamination, any liquid chemical or fuel storage facility with capacity greater than 2,000 gallons, any military facility, any industrial treatment lagoon, any automotive service station, any landfill (open, closed or inactive), any industrial facility (including dry cleaning facilities), any septic system, any cemetery, any salt storage facility, any highway maintenance yard, any truck and/or bus maintenance yard, any underground fuel and chemical storage tank with a capacity of 2,000 gallons or more, any live-stock operation, any body of surface water containing salt or brackish water, any quarrying and/or mining facility, any asphalt and concrete manufacturing facility, and any open dump or junkyard.

5. "Minor pollutant source" means any liquid chemical or fuel storage tank with capacity less than 2,000 gallons, any stormwater detention or retention basin, any sanitary sewer line, any sanitary sewer manhole, any sanitary sewer pump station, any septic tank or leaching field, any sewage treatment facility, any active farm, and any facility to which the Department has issued a discharge permit pursuant to N.J.A.C. 7:14A.

6. "Modify" means to make any change to a public community water system which results in the addition or replacement of a water supply, treatment process, pumping station, storage tank, or distribution system. The terms "modification" and "modified" shall be construed accordingly. The cleaning and lining of water mains, and the replacement of valves, hydrants, pumps and controls do not constitute a modification to the water system.

7. "Peak daily demand" means:

- i. For existing water systems, the average daily demand as recorded in the peak month of the prior five years plus anticipated water demand calculated in accordance with N.J.A.C. 7:10-12.6(b).
- ii. For proposed water systems, an estimation of the anticipated water demand in accordance with N.J.A.C. 7:10-12.6(b).

8. "Post-chlorination" means the addition of chlorine to the treated water at a water treatment plant effluent, following all other treatment processes, for the purpose of disinfection.

9. "Pre-chlorination" means the addition of chlorine to the water at a water treatment plant, prior to other treatment processes, for disinfection, oxidation, and control of tastes, odors and microbiological growth.

10. "Pretreatment" means a water treatment plant process employed to prepare water for filtration, including mixing, coagulation, flocculation or softening, and sedimentation.

11. "Superchlorination" means the addition of chlorine to the water at a water treatment plant in amounts sufficient to produce chlorine residuals so large as to require dechlorination.

(b) In the case of an extensive or complex proposed public community water system or one that deviates from the standards and requirements of this subchapter as provided in N.J.A.C. 7:10-11.3, the Department recommends that the applicant request a preapplication conference to discuss preliminary plans and data.

(c) For the purposes of this subchapter and to determine the degree of treatment required, the following classifications apply to natural waters intended as sources of supply for potable water purposes:

1. All water obtained from a subsurface source by a well is classified as ground water.

2. All water obtained from a river, stream, drainage basin, natural lake, artificial reservoir, or impoundment above the water supply intake, and all ground water in which the average total coliform concentration exceeds 50 per 100 milliliters in any one month, based on weekly monitoring, is classified as surface water.

3. All water obtained from a subsurface source by a well, when the well has a casing length less than 50 feet or has a screen or uncased borehole within 50 feet of a surface water body (unless in a confined aquifer or a low risk formation) or when the water has significant occurrences of insect, or other macroorganisms, algae, or large diameter pathogens such as *Giardia lamblia*, *Cryptosporidium*, or fecal coliform, or when the water has significant and relatively rapid shifts in characteristics such as turbidity, temperature, conductivity, or pH, that closely correlate to climatological conditions, is classified as ground water under the direct influence of surface water.

(d) The Department may terminate review of and return without prejudice any application for a permit under this subchapter which has remained technically deficient for three years after the date of submittal.

(e) The review of permit applications under this subchapter is limited to safety, sanitary and certain hydraulic engineering features of public health significance. The review does not include the examination of structural, hydraulic, mechanical, electrical design, or economic factors. The Department reserves the right to deny an application for a permit to construct a public water system that, in the Department's determination, presents a danger to the public health or safety.

(f) The approval of other regulatory programs within the Department and/or of the Board of Public Utilities (BPU) may be required for a public community water system. The Department recommends that an applicant for a permit under this subchapter contact the respective regulatory pro-

grams regarding water diversion rights, well drilling permits, stream encroachment permits, and wetlands permits, and the Board of Public Utilities regarding approval of municipal franchises, rates, and charges.

#### 7:10-11.5 Permit application requirements

(a) No person shall construct or modify a public community water system prior to obtaining a permit from the Department pursuant to this section.

1. All applications for a permit to construct or operate a new public community water system shall comply with the requirements set forth at N.J.A.C. 7:10-13.3 and 13.4.

(b) An application for a permit to construct and/or modify a public community water system shall be submitted in accordance with this section and shall include plans, specifications and an engineer's report prepared pursuant to (d) through (f) below by a qualified New Jersey licensed professional engineer. The plans shall bear the engineer's seal as required by N.J.S.A. 45:8-45.

(c) A complete permit application shall include all of the following:

1. A completed Standard Application Form obtained from the Department, which shall include the name and address of the applicant, the licensed professional engineer's description of the project with an estimate of the project cost and signatures of the applicant and the licensed professional engineer. Machine copies are not acceptable.

i. The application form shall be signed by an official (with title) or an authorized agent of the public body, company, or corporation that will own and/or operate the public community water system. If the application is signed by an authorized agent, a certified copy of the authorization shall be attached.

(1) A copy of a resolution issued by the municipal or municipal utilities authority which consents to the public community water system providing water service within a specified area or territory of concern (commonly known as "franchise area") pursuant to N.J.S.A. 48:2-14; and

(2) A copy of the application filed with the Board of Public Utilities (BPU) which petitions the BPU for approval of the municipal consent for the franchise area, for approval of the initial rates and tariffs applicable to the public community water system and for approval of the issuance of stock and assumption of debt by the public community water system pursuant to N.J.S.A. 48:2-1 et seq. and N.J.A.C. 14:1;

2. The plans, specifications and engineer's report specified at (d), (e) and (f) below;

3. A copy of a Pinelands Certificate of Filing, Notice of Filing, Certificate of Completeness, Preliminary Zoning

Permit, resolution of the Pinelands Commission approving the project or a letter from the Pinelands Commission indicating that the project is exempt from Pinelands Commission review; and

4. The applicable permit application review fee pursuant to N.J.A.C. 7:10-15.

(d) The engineer's report shall, when pertinent, contain the following:

1. A description of any existing water system as related to the proposed water system;

2. Information on present and anticipated future population served by the public community water system together with present and anticipated water requirements and the relationship of the proposed water system to these factors. The design period should, in general, be 25 years unless a shorter design period can be justified;

3. Information on the source of water supply, as follows:

i. For a surface water source, the dependable yield; characteristics of the quality of the water in relation to treatability; information from a sanitary survey on the major and minor pollutant sources; and existing or proposed measures to ensure adequate protection of the supply;

ii. For a ground water source or a ground water source under the direct influence of a surface water, a general description of proposed well construction; data on the geological strata expected to be penetrated and the effect that such strata may have on the quality of the water; available information on the dependable yield and water quality; test well findings (if any); major and minor pollutant sources within a radial distance of 500 feet or the zone of capture of the well, whichever is greater, or, in the case of a creviced or fissured rock formation or unconfined aquifer, within a larger area as determined pursuant to N.J.A.C. 7:10-11.7; a general description of the construction features proposed to protect the well from major and minor pollutant sources; a copy of the proposed well formation log showing the types and thicknesses of formations penetrated by the well (if this log is not available at the time of application, it must be submitted to the Department when the well has been constructed); and a copy of the well pump test, pursuant to N.J.A.C. 7:10-11.7;

4. A description of pumping equipment, including capacity of pump units and type of drive, general information on the arrangement of facilities, standby power (if provided), control of operation, and alarm systems;

5. A description of proposed treatment processes, including data demonstrating that the processes will produce treated water that meets the requirements of the State primary and secondary drinking water regulations at N.J.A.C. 7:10-5 and 7, and information on the type and application rate of any drinking water additive and the capacity of each feed unit;

6. A description of proposed methods for the treatment and disposal of sludge and filter backwash;

7. A description of sanitary safeguards of the storage, transmission, and distribution system;

8. A conceptual description of the entire water system to be built if the proposed system is to be built in stages;

9. Total estimated cost of construction of the proposed system, and in addition estimated legal and engineering fees, and the estimated cost of all related infrastructures;

10. In the case of modification or an addition to an existing water treatment plant, plans for maintaining existing treatment units in operation during construction or for providing an adequate alternative water supply; and

11. If any existing treatment unit will be shut down during construction, a schedule for delivering water meeting the requirements of the State primary and secondary drinking water regulations at N.J.A.C. 7:10-5 and 7 during the shutdown period.

(e) The specifications shall describe the sanitary safeguards of the proposed system, including the method or methods of disinfecting facilities. Specifications regarding the general contract, notice to bidders, and detailed specifications for items such as doors, windows, fittings, fixtures, steel work, concrete and wood are not required to be submitted for purposes of this subchapter.

(f) The plans shall meet the following requirements:

1. Plans shall include construction drawings in sufficient detail to facilitate examination of and comprehension of the proposed water system. The north point and datum shall be noted on each drawing. Topography shall be shown by elevations, contours or other suitable methods. Where pertinent, roads, streams, municipal boundaries, flood elevations, and other relevant geographical features shall be shown, including locations of watersheds, reservoirs, wells and well fields, water treatment plants, existing water transmission mains and distribution mains, water storage tanks, fire hydrants, and major and minor pollutant sources. In the case of transmission and distribution mains, an index page shall be supplied showing by number the area and districts covered by the various sheets.

2. Plans shall be drawn to standard scale on uniformly sized sheets. Each sheet shall contain necessary titles, scales, dates, water system owner's name and a general description of the water system. Each sheet shall bear the engineer's seal as required by N.J.S.A. 45:8-45.

3. The preferred drawing size is 24 inches by 36 inches, including suitable margins. Lettering shall be sufficiently large to permit photo-reduction, and all plans shall have graphic scales.

4. Sheets shall be bound together.

5. All topographical symbols and conventions shall be defined. Water transmission and distribution mains to be constructed for the portion of the water system for which the permit to construct is sought, if the proposed system is to be built in stages, and/or in the future shall be shown by suitable conventions. Where applicable, existing sanitary sewers and combined sewers shall be shown by clear designations.

6. Surface elevations shall be drawn for all relevant parts of the proposed water system, with dimensions sufficient to permit verification of the operations of the system. Datum shall be stated.

7. Plans for intake structures, pumping equipment, water treatment plants, and similar structures shall include a general plan showing the various treatment and pumping units and structures of the proposed water system, and, except as provided in (f)ii below, detail plans for all such units and structures.

i. All plans shall show longitudinal and transverse sections sufficient to explain the construction of each treatment unit, including the hydraulic profile through the plant, when applicable.

ii. Pursuant to N.J.A.C. 7:10-11.4(f), only the detail plans relevant to the examination conducted by the Department must be included. Detail drawings for the guidance of builders or contractors (for example, structural details, reinforcement details, details of heating, ventilation, electrical work, architectural details, and the electrical-mechanical details of pumps, engine and machinery) need not be included.

8. Plans for wells shall include site plans, schematic drawings and detail drawings as follows:

i. Site plans for wells shall show:

(1) The topography and the location of existing and/or planned wells in the well field for the proposed water system. Each well shall be given an identifying number in chronological order of planned construction;

(2) The identification of the ownership of all land within a fifty foot radius of each well and the location of all potential major and minor pollutant sources; and

(3) The elevation of each well head above a common datum plane and the 100 year flood elevation.

ii. Schematic drawings for wells shall include as much detail as practicable, and shall show:

(1) The length, size and location of casings and screens;

(2) The method of sealing off shallow ground water and waters from other aquifers from entering the well, including the sealing of the annular space be-

tween the drill hole and the outer casing and the surface strata;

(3) Drawing(s) of the pumping unit(s), including prime and standby power sources;

(4) The plan and section view of the pump house or any similar structure; and

(5) The method of connecting the well or other ground water source with the distribution system of the existing or proposed water system.

iii. Detail drawings for wells shall show:

(1) Details of the well head, including elevations of protective curbing, top of casing, pump house floor and surrounding grade;

(2) The method of sealing the well head against surface water contamination;

(3) The location of well vents and the methods for protecting them against contamination; and

(4) The well head piping details, showing locations of check valve, surge or air relief valve, shutoff valves, sampling taps, water level indicator, flow meter, discharge pressure gauge, and blowoff connection to permit pumping to waste.

9. Plans for water main extensions shall include:

i. Site plans showing the location of the proposed water main, the right-of-way or easement, sanitary and storm sewers and other utilities in the proposed construction area;

ii. Elevations and details sufficient to show clearances and construction methods in the vicinity of sanitary sewers;

iii. The methods of connecting to the existing water supply and maintaining adequate protection of the existing water supply; and

iv. The locations of valves, hydrants, blowoffs and flushing connections.

(g) The Department shall make a preliminary review of each application as follows:

1. If the application does not contain all documents and information required pursuant to (b) through (f) above, the Department shall within 20 working days of receipt of the application, either return the application or advise the applicant in writing as to the additional information required to make the application administratively complete and the date by which the additional information must be received by the Department. If an application is returned, the applicant will be advised in writing as to the additional information required to make the application complete.

2. If the application contains all documents and information required pursuant to (b) through (f) above and is

determined to administratively complete, the Department, within 20 working days of receipt of the application, shall so advise the applicant in writing.

(h) The Department shall make a technical review of each application within 60 working days after it declares the application administratively complete as follows:

1. If the application does not contain sufficient technical information as required pursuant to (d) through (f) above or if the technical information requires clarification, the Department shall so advise the applicant in writing and establish a date by which additional or clarifying information must be received by the Department. If additional or clarifying information is not received by the specified date, the Department may:

- i. Return the application;
- ii. Extend the date by which the applicant must provide the additional or clarifying information; or
- iii. Deny the application

(i) The Department shall perform a detailed analysis of the technically complete application and shall develop a staff recommendation to issue the permit or deny the application. The staff recommendation shall include any conditions to be attached to the permit if the recommendation is to issue the permit or an explanation of the reasons for denial if the recommendation is to deny the application.

(j) The Department shall issue a permit, with any conditions deemed appropriate by the Department, for the construction of the proposed water system and distribution of potable water from said water system pursuant to the requirements of this chapter, or the Department shall deny the application in writing with an explanation of the reasons for denial.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
In (a), added 1.

#### **7:10-11.6 General requirements for source, treatment, storage and distribution components**

(a) The components of a public community water system, including source, treatment, storage and distribution facilities shall be designed and constructed to meet all the demand requirements imposed on the water system and shall have the firm capacity to meet the applicable peak daily demand as defined at N.J.A.C. 7:10-11.4(a).

(b) Regulations for instrumentation are as follows:

1. Each water supply source shall be equipped with a totalizing flow meter. For water systems for which the total average flow exceeds 0.1 MGD, flow recording equipment shall be installed for all wells and pump stations.

2. Each water supply source shall be equipped with instrumentation sufficient to ensure the proper operation of the treatment plant associated with the water supply source.

3. There shall be devices and/or equipment to determine the water level elevation in each distribution storage tank.

4. Each pump shall be equipped with a discharge pressure gauge.

(c) Every water treatment plant shall be equipped, at a minimum, with analytical equipment for the determination of chlorine residual concentrations, and, if treating surface water, with equipment for the measurement of turbidity. In addition, every water treatment plant shall be equipped with analytical equipment for water quality control tests appropriate to the type of water treatment used. A laboratory located at a water treatment plant that provides only day-to-day water quality control testing need not be a certified laboratory, but the analytical methods and procedures it uses must be in accordance with Standard Methods for the Examination of Water and Waste Water, 17th Edition, as amended and supplemented, incorporated herein by reference. Standard Methods is available from the American Public Health Association, 1015 Fifteenth Street, Washington, DC 20005.

(d) Upon completion of the construction of any component of a public community water system, including source, treatment, storage, and distribution mains, and before such component is placed into service, all surfaces which may come in contact with adequately protected water shall be disinfected in accordance with American Water Works Association (AWWA) standards for disinfection of facilities ANSI/AWWA-C651 through C654, as amended and supplemented, incorporated herein by reference. AWWA standards may be obtained from the American Water Works Association, 6666 West Quincy Avenue, Denver, Colorado 80235.

(e) Cross connections are prohibited as follows:

1. Cross connections are prohibited in any water treatment plant between any pipe or conduit carrying finished water and another pipe or conduit carrying wastewater, raw water, or water in any prior stage of treatment.

2. No conduit or chamber containing finished water shall have a common partition with another conduit or chamber containing waste filter wash water or water in any prior stage of treatment, unless the common partition is made completely impermeable by use of an acceptable protective membrane.

3. Sludge draw-off lines, filter backwash discharge lines, well blow-off lines, and overflows from any water treatment or treated water storage reservoir or tank shall not be connected directly into any storm drain, sanitary sewer, or water source, but shall be protected by a suitable one way air-gap-delivery connection to ensure that no back-flow can occur under any condition.

1. All surface water intakes shall be equipped with multiple surface water intake units in order to provide firm capacity (excluding the raw water intake line).

2. Intake structures shall be located and arranged to minimize the impact of surface drainage on water quality.

3. The maximum surface water intake velocity shall not exceed one-half foot per second.

4. Where practical, intake structures shall be constructed to permit the selective withdrawal of water from multiple levels of reservoirs.

5. Each intake structure shall be protected by removable or cleanable coarse screens or racks to prevent debris from entering the water system. Fine screens may be used for the purpose of excluding smaller fish and debris from the system.

6. Intake structures are prohibited within 100 feet of a septic system or sanitary sewer line.

7. All mechanical equipment shall be protected against the 100 year flood.

(d) Regulations for surface water and ground water under the direct influence of surface water treatment plants are as follows:

1. Pilot test data shall be submitted for the proposed treatment process.

2. Treatment shall, at a minimum, include coagulation, flocculation, filtration and disinfection.

3. Gravity filtration shall be provided.

4. The treatment plant shall be designed to accommodate powdered activated carbon (PAC) or granular activated carbon (GAC) treatment units.

5. The treatment plant shall have firm capacity to meet peak demand (excluding coagulation, flocculation and sedimentation).

6. Surface water shall be filtered and disinfected in accordance with N.J.A.C. 7:10-9.

7. Auxiliary power for surface water treatment plants shall be provided in accordance with N.J.A.C. 7:10-11.6(I).

(e) All filtration treatment plants, treating either surface water or ground water under the direct influence of surface water, shall be equipped as follows:

1. For the continuous monitoring and recording of the disinfectant residual entering the distribution system;

2. For the continuous monitoring and recording of effluent turbidity from each individual filter; and

3. Each filter must have the capability to filter to waste at the normal production rate.

#### 7:10-11.9 Standards for the construction of pumping stations

(a) All pumping stations shall be located above-ground for ease of inspection and maintenance. Where an above-ground location is not feasible, the station shall meet the requirements for underground pumping stations at (g) below.

(b) Regulations for pumping station location and protection are as follows:

1. Pumping stations shall not be located within the 100 year flood hazard area. Where a location outside the 100 year flood hazard area is not feasible, the pumping station shall be protected against flooding. All treated water pumping stations shall have a floor elevation at least one foot above the highest recorded flood elevation.

2. Pumping stations shall be constructed in compliance with N.J.A.C. 7:10-11.6(g).

(c) Wet wells shall be watertight and protected against seepage and contamination. Wet wells shall be covered and provided with downfaced or mushroom type screened vents protected against entry of foreign matter.

(d) Regulations for pumping equipment are as follows:

1. Pumping equipment shall be designed to meet the demand requirements pursuant to N.J.A.C. 7:10-11.6(a).

2. Sufficient pumping units shall be supplied so as to have a firm capacity to achieve the maximum design output of the station.

3. Where low pressure may adversely affect customers, a booster pump station shall be designed and controlled to maintain a minimum pressure of 20 pounds per square inch (20 p.s.i.) in the water main from which it draws suction. If chronic low pressure problems exist, the Department shall require an automatic switch to deactivate pumps in low pressure situations.

4. Priming systems shall be constructed to prevent contamination of the water supply.

(e) Each pumping station shall be equipped with check valves, flow meters, isolation valves located before and after the pumping station, pressure gauges, and manual shutoff valves within the station.

(f) Each pumping station with a design capacity greater than or equal to 100,000 gallons per day shall be equipped with a flow totalizing meter.

(g) Each underground pumping station shall have sump and sump pump capacity adequate to handle leakage or a break within the station as follows:

1. A minimum of two sump pumps designed to be activated at different flood levels;
2. An alarm activated 24 hours a day that is triggered when water is six inches above the floor level or when the secondary sump pump activates. In addition, an automatic above-ground power shutoff shall be activated when the water reaches the base of the pumps; and
3. Isolation valves which automatically close either when there is a power failure or when the secondary sump pump is activated.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).  
Rewrote (d)2.

**7:10-11.10 Permit requirements and standard for the construction of distribution systems**

(a) A supplier of water may apply for a master permit, including all proposed routine water main extensions and/or replacements, transmission mains and interconnections, covering a set maximum number of service connections for a period not exceeding three years. At the time of application for such master permit, the supplier of water shall submit specifications and an engineer's report demonstrating that the water system can meet the requirements of this subchapter, as well as a system distribution map that differentiates between existing and proposed water mains.

1. Each master permit shall be renewed annually.
2. A master permit is available only to suppliers of water in those municipalities that have approved utility development plans in conformance with municipal master plans and zoning ordinances.

(b) For any distribution system improvement such as water main extension and/or replacement, transmission main or interconnection not covered by a master permit issued pursuant to (a) above, the supplier of water shall:

1. For any water main extension which includes new residential service to more than 15 realty improvements but less than 50 new service connections, or generates a new non-residential average demand of more than 6,000 gallons per day determined pursuant to Table 1 at N.J.A.C. 7:10-12.6(b), submit a completed permit Standard Application Form pursuant to N.J.A.C. 7:10-11.5(b), the Simplified Water Main Certification Form, available from the Bureau of Safe Drinking Water, PO Box 426, Trenton, New Jersey 08625-0426, the permit application review fee specified at N.J.A.C. 7:10-15.3(d)2, and a plan showing the location of existing and proposed water mains. The Simplified Water Main Certification Form includes the following information:

- i. The name and address of the supplier of water;
- ii. The diameter and length of water mains;
- iii. The anticipated water demand; and
- iv. A certification by the supplier of water that the proposed water main extensions will be constructed in conformance with the requirements of this subchapter.

2. For any water main construction which includes 50 or more new service connections, or is 1,500 or more feet in length or includes an interconnection with another public community water system, submit a water distribution map depicting locations of existing mains and proposed extension(s) of water mains, a complete permit application pursuant to N.J.A.C. 7:10-11.5(b), including the permit application review fee specified at N.J.A.C. 7:10-15.3(d)3 or 4, as applicable.

3. A permit pursuant to this section is not required for water main extensions other than those specified at (b)1 and 2 above.

(c) The Department shall deny a permit application under this section for any proposed distribution main extension if the source, treatment, transmission or storage capacity does not meet the requirements of N.J.A.C. 7:19-6.7 and 7:10-11.6(a), or the public community water system is unable to meet its historical peak daily demand as well as the additional demand anticipated from the proposed expansion.

(d) Regulations for the capacity and size of water mains are as follows:

1. Design capacity of water mains shall be such as to maintain a minimum pressure of 20 pounds per square inch (psi) at street level under all flow conditions.

2. The minimum diameter of all distribution mains shall be six inches for systems with an average demand of less than one MGD and eight inches for larger systems. The Department shall approve deviations from this minimum requirement if justified by hydraulic analyses submitted by the applicant, taking into consideration future water usage. The Department shall not approve a water

distribution main of less than six inches in diameter if it is intended to supply a fire hydrant(s) or if there is a reasonable possibility that it will be extended to serve additional properties or areas.

(e) General design requirements for water mains are as follows:

1. So far as is practicable, distribution mains shall be laid in a loop system to eliminate dead ends. The distribution system shall be equipped with hydrants or other flushing devices to permit water main flushing. Each dead end shall be provided with an adequately protected fire hydrant, flushing hydrant, or a valved outlet to which a temporary pipe may be affixed, to discharge flushed water above-ground. Flushing devices should be capable of providing a minimum pipe flushing velocity of 2.5 feet per second.

2. Water mains shall be designed to provide a maximum flow velocity (excluding fire service flow) of five feet per second for mains up to 16 inches in diameter and 10 feet per second for mains greater than 16 inches in diameter.

3. All distribution mains shall be covered with a minimum of 3.5 feet of earth or other suitable cover to prevent freezing.

4. Each newly constructed water main shall be disinfected before being placed in service in accordance with American Water Works Association Standard AWWA C651-86, as amended and supplemented, incorporated herein by reference and available as provided at N.J.A.C. 7:10-11.6(d).

5. All water mains and sanitary or industrial sewer lines shall be separated by a horizontal distance of 10 feet. If such lateral separation is not possible, the water and sewer lines shall be in separate trenches (step trenches are prohibited) with the top of the sewer line at least 18 inches below the bottom of the water main or with such other separation expressly approved by the Department. At crossings of sewer lines and water mains, the top of the sewer lines shall be at least 18 inches below the bottom of the water main (sewer service laterals are not subject to this requirement). If such vertical separation is not possible, the sewer line shall be of watertight construction (that is, ductile iron or reinforced concrete pipe), with watertight joints that are a minimum of 10 feet from the water main.

6. Water distribution mains shall be equipped with sufficient numbers of valves to minimize service interruption and safety hazards during repairs. The appropriate number of valves at each water main intersection shall be determined using an  $n-1$  formula (for example, at a four-way intersection, a minimum of three valves is required). Straight pipe runs such as transmission mains shall be equipped with valves at intervals of a minimum of 2500 feet. The Department shall approve deviations from the

minimum valve interval for larger transmission lines if justification therefor is provided, but in no case shall the interval between valves exceed one mile.

7. Water services and plumbing shall conform to the requirements of the Plumbing Subcode of the New Jersey State Uniform Construction Code, N.J.A.C. 5:23-3.15.

(f) Where water mains must be constructed to cross surface waters, the supplier of water shall discuss the appropriate design with the Department at a preapplication conference before submitting an application for a permit under this section.

(g) Regulations for distribution system maintenance are as follows:

1. Chambers or pits containing gate valves, air-relief valves, blowoffs, meters, or similar appurtenances to a distribution system shall be drained to ensure access and their functioning and shall not be directly connected to a storm sewer or sanitary sewer. Drainage may be discharged above ground or to dry wells.

2. Blowoffs, air-relief valves, flushing devices, and hydrant drains shall not be directly connected to a storm sewer or sanitary sewer.

3. The open end of an automatic air-relief pipe shall be extended from the manhole or enclosing chamber to a point at least one foot above the surrounding ground, and shall be provided with a downfacing elbow or mushroom cap and an insect screen. Manual air-relief pipes shall extend only to the highest point in the enclosing chamber, unless a high water table necessitates that the air relief pipes extend above ground.

4. Except as provided at N.J.A.C. 7:10-10, physical connections between a public community water system distribution system and any unapproved water supply are prohibited.

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Rewrote (b); in (c), added reference to treatment; in (g)3, substituted "pipes" for "valves" in the last sentence.

#### 7:10-11.11 Distribution storage requirements

(a) Suppliers of water shall provide finished water storage as required pursuant to N.J.A.C. 7:19-6.7 and as follows:

1. Each public community water system shall provide storage for finished water as an integral part of its distribution system whether the water system has its own source(s) of water or buys water from another public community water system.

2. The location, size, type and elevation of the equalization reservoir, standpipe, or elevated storage tank shall be such as to ensure that the distribution system meets the pressure requirements established at N.J.A.C. 7:10-11.10(d).

3. Each clear well, whether designed separately or as part of a filter structure, shall meet the requirements for below-grade reservoirs set forth at (e) below.

4. Finished water shall not be stored in a compartment adjacent to an untreated water storage compartment if a single wall separates the two compartments.

5. Each storage reservoir and tank shall be equipped with an overflow and a low level warning alarm.

6. There shall be equipment to determine the water level in each distribution storage tank. Each storage tank with a capacity greater than 100,000 gallons shall be equipped with a level recorder.

7. Water storage facilities shall be designed so as to permit dewatering (for example, by a yard hydrant) for cleaning and maintenance without interrupting service. Direct connection to a storm sewer line or a sanitary sewer line is prohibited.

(b) Each equalization reservoir, standpipe and elevated storage tank shall have adequate safety devices and shall be protected from unauthorized access and vandalism as required pursuant to N.J.A.C. 7:10-11.6(g).

(c) Regulations for distribution storage roofs and covers are as follows:

1. Each reservoir, standpipe or elevated tank shall be provided with an impermeable and durable roof or cover.

2. The roof of the structure shall be well-drained but drainspout pipes shall not enter the reservoir. Parapets or similar structures that tend to hold water or snow on the roof are prohibited.

3. Each concrete reservoir with an earthen cover shall have a roof that is sloped to facilitate drainage. Such a reservoir should be equipped with an impermeable membrane roof cover.

4. Each access manhole and scuttle located in the roof of an elevated tank or in the roof of a ground-level reservoir shall be framed at least six inches above the surface of the roof. Each manhole located in a below ground-level reservoir shall be elevated at least 36 inches above the ground. Each access manhole and scuttle shall be equipped with a solid cover securely fastened against unauthorized entry.

5. Each vent shall be equipped with a downfacing elbow or mushroom cover and an insect screen. Each vent on a ground-level reservoir or a below ground-level reservoir shall terminate not less than 24 inches above the finished grade, whether roof or soil.

(d) Regulations for inside paint and protective coatings are as follows:

1. Any protective coating in contact with treated water shall be inert and nontoxic and shall meet the requirements of N.J.A.C. 7:10-8.

2. Interior paint shall be properly dried and cured so that, after curing, the coating does not transfer any volatile or toxic substance to the water. Prior to placing a storage facility in service, the water shall be tested for a volatile organic compounds to ensure compliance with MCLs at N.J.A.C. 7:10-5.

(e) Regulations for below-grade reservoirs are as follows:

1. Any reservoir constructed partly or entirely below grade shall be designed, located, and graded so as to be secure against uplift and entry of underground or surface contamination.

2. Where a below-grade reservoir is located within 100 feet of sanitary sewer line, the water supplier shall ensure that such sewer line is constructed of steel, reinforced concrete, cast or ductile iron or other suitable material and shall test such sewer line for water tightness upon installation of the below-grade reservoir.

3. Below-grade reservoirs are prohibited within 100 feet of a sanitary sewer manhole or lateral.

4. If a below-grade reservoir is located in an area with a high water table, the reservoir shall be equipped with a double containment system that includes leak detection equipment or a suitable alternative approved by the Department so as to prevent untreated ground water from entering the reservoir. A pre-application meeting with the Department is recommended if an alternative design is proposed.

(f) Regulations for the construction of above-grade reservoirs, standpipes, and elevated tanks are as follows:

1. Each above-grade reservoir, standpipe, and elevated tank shall be equipped with such inside or outside ladders as may be necessary to facilitate inspection.

2. Each riser pipe shall be protected from freezing.

3. Each overflow of an above-grade reservoir, elevated tank or standpipe shall consist of a downpipe that terminates no less than six inches nor more than (36) inches above the ground, and shall be located so as to prevent erosion of the foundation. A stub overflow is prohibited.

(g) Regulations for hydropneumatic tanks are as follows:

1. Hydropneumatic tanks shall be excluded in calculating the system storage capacity of a public community water system.

2. All hydropneumatic tanks shall be located above ground and completely enclosed within a building. The Department shall approve deviations from this requirement for larger installations if it is not feasible to enclose a larger tank in a building.

3. The total capacity of the wells and pumps shall be at least 10 times the average daily demand in water systems using only hydropneumatic tanks for storage. The gross volume of the hydropneumatic tank, in gallons, shall be at least 10 times the capacity of the largest well and/or pump, rated in gallons per minute.

4. Each hydropneumatic tank shall be equipped with a pressure relief valve and a vacuum relief valve.

(h) All storage reservoirs, tanks, and appurtenances shall be disinfected in accordance with N.J.A.C. 7:10-11.6(d).

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a)6, deleted "flow" preceding "level recorder" in the second sentence.

### 7:10-11.12 Chemical handling and chemical feed systems

(a) General requirements for chemical handling and chemical feed systems are as follows:

1. A minimum of two chemical feeders are required for a water treatment plant that treats more than one source of water supply or for a water treatment plant whose capacity exceeds 20 percent of the public community water system capacity. The feeders shall have sufficient capacity to provide all of the chemical required to treat the water through the treatment plant.

2. Variation in the feed rate shall not exceed five percent of the intended application rate.

3. Either flow pacing or residual pacing shall be provided to ensure accurate chemical application rate.

4. Each chemical feeder shall be equipped with a device that accurately measures the amount of chemical feed.

5. An antisiphon device shall be installed on the chemical solution feed line. The device shall include an antisiphon valve to provide a vacuum break on the chemical solution feed line. The chemical feed line shall be looped to a level higher than the highest elevation of chemical storage tank so as to prevent back siphonage or drainage into the treated water supply.

6. Each chemical feeder shall be electrically interconnected with the well or service pump.

7. Each treatment plant shall have a minimum of 30 day storage capacity for chemicals based upon the expected monthly use of chemicals by the treatment plant. If chemicals will be delivered to the treatment plant in bulk deliveries, the tank capacity shall be a minimum of 120 percent of the bulk delivery volume.

(b) Regulations for chemical solution tanks are as follows:

1. Each chemical solution tank shall be provided with adequate agitation to keep the strength of the solution uniform.

2. Makeup water shall be introduced into the chemical solution tank through an air break or other approved method, to prevent back siphonage.

3. The capacity of each chemical solution day tank shall be sufficient to provide at least eight hours worth of chemical solution storage at normal operating feed rates.

4. Direct connection between chemical solution tank drains and sanitary sewer lines are prohibited.

5. Waste liquids or sludge from chemical solution tanks shall be disposed of in accordance with applicable State and Federal law and regulations.

(c) Dry feeders shall be either of the volumetric or gravimetric type, and shall comply with the following requirements:

1. Each dry feeder shall be completely enclosed and equipped with adequate means of dust control.

2. Each solution pot shall be adequate to ensure effective solution or suspension of the chemical.

3. Makeup water shall be introduced into solution pots through an air break or other approved method, to prevent back siphonage.

(d) Chemical feed lines shall be equipped with clean-out connections, shall be easily accessible for repair or cleaning, shall be protected against damage and freezing, shall be corrosion resistant, shall be as short as possible, and shall be provided with adequate slope to permit draining.

(e) Safety regulations are as follows:

1. Equipment for the storage and handling of chemicals that are hazardous to the health of employees shall include the provision of rubber or neoprene gloves and hand washing facilities. Where dry powdered chemicals are handled, National Institute for Occupational Safety and Health (NIOSH) approved dust respirators shall be provided.

2. Safety shower(s) shall be provided for employees where hazardous chemicals are handled. Such showers shall be in close proximity to the handling location.

3. A manufacturer's material safety data sheet for each chemical used on site shall be posted in a conspicuous location.

4. When a hazardous or explosive chemical, such as sodium chlorite or powdered activated carbon, is used, it shall be safely stored and handled. For example, where powdered activated carbon is used, the public community water system shall provide adequate forced draft ventilation of the feed equipment, a fireproof building or compartment for storage, and explosion-proof electrical outlets, lights and motors in the feeder room.

### 7:10-11.13 Pretreatment requirements

(a) General regulations for pretreatment are as follows:

1. The number of pretreatment units shall be such that when any single unit is out of service the remaining pretreatment unit(s) comply with the detention time and surface loading rate requirements of this section for at least the average daily demand on the treatment plant. A minimum of two pretreatment units is required for surface water treatment.

2. Sufficient data shall be included in the engineer's report submitted pursuant to N.J.A.C. 7:10-11.5 to establish the type and application rate of the chemicals required for pretreatment.

3. Each pretreatment basin shall be equipped with a drain or drains to facilitate dewatering.

4. Adequate provision shall be made for the removal of sludge. Where sludge is expected to be voluminous, consideration should be given to mechanical methods of removal.

5. Water treatment sludge shall be disposed of in accordance with applicable State and Federal law and regulations.

(b) Pretreatment chemicals shall be applied to water where there is sufficient agitation to ensure rapid and uniform dispersion of each chemical throughout the water, such as at pump suction, rapid mix basins or static mixers.

(c) Regulations for flocculation are as follows:

1. Flocculation is required for all surface waters.

2. Flow-through velocities shall not be less than 0.5 feet per minute or greater than 1.5 feet per minute, with a detention time for floc formation of not less than 30 minutes.

3. Flocculation shall be accomplished by agitation under mixing conditions. Agitators shall be driven by variable speed drives, with the peripheral speed of paddles ranging from 0.5 to 3.0 feet per second.

4. The flocculation unit shall have compartments and inlet and outlet facilities to minimize short-circuiting and to permit floc to pass from the flocculator to the subsequent treatment unit without impairment. The velocity of flocculated water through pipes or conduits to settling basins shall not be less than 0.5 or greater than 1.5 feet per second.

5. Flocculation (or reaction) time for solids contact units shall be calculated on the basis of the input flow and the volume occupied by the agitated mixture of slurry with the water being treated. For horizontal flow units, the calculation shall be based on the volume of the flocculation or reaction chamber.

(d) Regulations for sedimentation are as follows:

1. If an adequate public community water system is available, if such public community water system's water lines are within 200 feet of the property line of the realty improvement or the existing water system, if connection can legally be made thereto, and if such connection is practical, then the realty improvement or the existing water system shall be supplied with water from that source except as provided in (c)1i below. Such connection shall be considered practical unless the connection to the public community water system involves major construction such as the crossing of a highway, stream or body of water, or major utility easement; and/or distance from the water line or any other field condition renders such connection cost-prohibitive:

- i. An existing well in an existing water system may be replaced in lieu of such connection to a public community water system with the approval of the administrative authority.
2. The feasibility of establishing a new public community water system;
3. The dependability of the source of water supply;
4. Geology;
5. Major or minor pollutant sources as defined at N.J.A.C. 7:10-11.4(a)4 and 5; and
6. The components necessary to construct a balanced system of supply, pumping, treatment, distribution and finished water storage facilities to meet the peak demand.

(d) A person shall not drill, construct, install, repair, replace, modify, stimulate or decommission any well or engage in such business unless such person possesses a valid New Jersey well driller's license of the proper class or unless such drilling is performed under the immediate on-site supervision of a person who possesses a valid New Jersey well driller's license of the proper class issued by the Department pursuant to N.J.S.A. 58:4A-4.1 et seq. and N.J.A.C. 7:9D.

(e) A person shall not undertake or arrange for any well drilling activity that is not under the immediate on-site supervision of a person who possesses a valid New Jersey well driller's license of the proper class issued by the Department pursuant to N.J.S.A. 58:4A-4.1 et seq. and N.J.A.C. 7:9D.

(f) A person shall not drill, construct, install or replace a well unless such person has obtained a well permit from the Department pursuant to N.J.S.A. 58:4A-4.1 et seq. and N.J.A.C. 7:9D.

(g) A person shall not install, repair or replace a well pump or well pumping equipment or engage in such business unless such person possesses a valid New Jersey pump installer's license or a valid New Jersey well driller's license of the proper class pursuant to N.J.S.A. 58:4A-4.1 et seq. and N.J.A.C. 7:9D.

(h) No material that will cause the delivered water to be toxic shall be used in the installation of a well.

(i) Any component and/or construction material containing lead alloys used in a public noncommunity water system or nonpublic water system shall meet the following:

1. The lead content of solder and flux shall not exceed 0.2 percent.
2. The lead content of pipes, fittings, and any metallic components in contact with the drinking water shall not exceed 8 percent.
3. The use of lead packers on potable water wells is prohibited.

Amended by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

In (a), (d), (e) and (f), inserted references to N.J.A.C. 7:9D; in (g), inserted "pursuant to N.J.S.A. 58:4A-4.1 et seq. and N.J.A.C. 7:9D" following "the proper class"; deleted former (h) and (i) and recodified former (j) and (k) as new (h) and (i).

#### 7:10-12.5 Deviations from construction standards

(a) The administrative authority shall issue an approval to construct a public noncommunity water system or nonpublic water system that deviates from the standards and requirements of this subchapter, except as provided in (c) below, if the applicant for such approval can establish that the proposed public noncommunity water system or nonpublic water system provides adequate protection of the water system's water supply, as defined at N.J.A.C. 7:10-12.3. The administrative authority shall review such an application for approval using a conservative evaluation of data submitted by the applicant pursuant to (b) below.

(b) An applicant for an approval to construct a public noncommunity water system or nonpublic water system that deviates from the standards and requirements of this subchapter shall submit analytical and survey determinations which demonstrate either of the following:

1. That the source of water supply is adequately protected by natural means; or
2. That a comparable water system or pilot plant has operated for a period sufficient to demonstrate adequate protection of the water supply.

(c) Deviations from the well construction standards at N.J.A.C. 7:9D-2 shall be approved by the Department in accordance with N.J.A.C. 7:9D-2.8.

Amended by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

In (c), substituted "7:9D-2" for "7:10-12.4 through 21" and inserted "in accordance with N.J.A.C. 7:9D-2.8"; deleted (d) and (e).

**7:10-12.6 Water volume requirements**

(a) The pumping capacity from all available water sources for a public noncommunity or nonpublic water system shall meet the following minimum requirements:

1. For water systems that supply residential consumers, the system shall deliver a minimum of 2.0 gallons per minute per bedroom served for 30 minutes.

2. For water systems that supply all persons other than residential consumers and use hydropneumatic storage, the pumping capacity shall be 10 times the average daily demand as determined using Table 1 below. If gravity storage is used, the minimum pumping capacity may be lowered, but not to less than the minimum required yield as set forth in (b) below.

(b) The total yield from all available water sources for a public noncommunity or nonpublic water system shall meet the following minimum requirements:

1. For water systems that supply residential realty improvements, the yield shall be at least 0.25 gallons per minute per bedroom served.

2. For water systems that supply all persons other than residential consumers, the yield shall be at least three times the average daily demand as determined using Table 1 below.

TABLE 1  
AVERAGE DAILY WATER DEMAND

Type of establishment	Gallons per person
1. Cottage	100
2. Single family dwelling	100
3. Multiple family dwelling (apartment)	75
4. Rooming house	50
5. Boarding house**	75
a. For each nonresident boarder	15
6. Hotel**	50-75
7. Motel or tourist cabin	50-75
8. Mobile home park	100
9. Restaurant	
a. Sanitary demand, per patron	5
b. Kitchen demand, per patron	5
c. Kitchen and sanitary demand	10
10. Camp*	
a. Barracks type	50
b. Cottage type	40
c. Day camp (no meals served)	15
11. Day school	
a. No cafeteria or showers	10
b. With cafeteria and no showers	15
c. With cafeteria and showers	20
d. With cafeteria, showers and laboratories	25
12. Boarding school**	100
13. Health care institution other than hospital	75-125
14. Hospital (depending on type)	150-250
15. Industrial facility (8 hour shift)	25
16. Picnic grounds or comfort station	
a. With toilet only	10
b. With toilet and showers	15
17. Swimming pool or bathhouse	10
18. Club house**	
a. For each resident member	60
b. For each nonresident member	25

Type of establishment	Gallons per person
19. Nursing home	150
20. Campground	
a. Without individual sewer hook-up	75 per site
b. With individual sewer hook-up	100 per site
c. With laundry facility and individual sewer hook-up	150 per site
21. Store, office building	0.125 gal/sq. ft
22. Self-service laundry	50 gal/wash

\* When the establishment will serve more than one use, the multiple use shall be considered in determining water demand.

\*\* Includes kitchen demand at 10 gallons per person per day. If laundry demand is anticipated, the estimated water demand shall be increased by 50 percent.

**7:10-12.7 Sources of water**

(a) The source of water for a public noncommunity or nonpublic water system shall be a well or wells, except that the administrative authority shall approve the use of spring or springs in accordance with N.J.A.C. 7:10-12.23 if construction of a well is not possible due to the local terrain and/or geology, provided the water derived from the spring or springs is disinfected pursuant to N.J.A.C. 7:10-12.32. Dug wells, Kelly concrete-cased wells and/or their equivalents, and cisterns shall not be used as a source of water for such systems unless approved by the Department in accordance with N.J.A.C. 7:10-12.25.

(b) Duplicate wells and pumping equipment, or interconnection with another water system, shall be installed and ready to be used for a water system for which the average water demand exceeds 30,000 gallons per day.

(c) A single nonpublic water system shall not serve multiple realty improvements unless one person owns and directly controls all such realty improvements.

**7:10-12.8 Frost protection**

All parts of a public noncommunity or nonpublic water system shall be designed, located and constructed to protect the water against freezing.

**7:10-12.9 Physical connection**

No physical connection shall be established between a public noncommunity or nonpublic water system constructed in accordance with this subchapter and a public community water system unless the physical connection is approved in accordance with N.J.A.C. 7:10-10.

**7:10-12.10 Priming systems**

All water used to prime pumps for a public noncommunity or nonpublic water system shall be potable water, to prevent the contamination of the water system.

**7:10-12.11 Disinfection of water system components**

(a) After completion of construction, alteration or repair of a public noncommunity or nonpublic water system, all surfaces with which adequately protected water may come into contact shall be disinfected before being placed into service.

(b) Methods of disinfection include, but are not limited to, the following:

1. Contact with a chlorine solution of concentration not less than 50 parts per million for a minimum period of 12 hours;
2. Contact with a chlorine solution of concentration not less than 20 ppm for a minimum period of 24 hours;
3. Thorough wetting of the surfaces to be disinfected by means of brush or spray application of a chlorine solution of concentration not less than 500 ppm for a minimum contact period of one hour.

(c) The method or methods for the disinfection of water system components shall be included in the materials submitted with the application for certification of a new, repaired or altered public noncommunity or nonpublic water system pursuant to N.J.A.C. 7:10-12.39 to 12.42.

#### 7:10-12.12 Minimum distance requirements

(a) The minimum distances at which certain components of a public noncommunity or nonpublic water system shall be located away from sanitary sewer and septic systems, fuel storage tanks and other structures are set forth in N.J.A.C. 7:9D-2.

1. An administrative authority may require a greater distance than that required in N.J.A.C. 7:9D-2 between a well and a sewage system component where gravel, limestone, or fractured, creviced or fissured rock formations are expected to be encountered during drilling.

2. An administrative authority shall approve a reduction in the distance required between a well and a disposal field or a seepage pit to a minimum of 50 feet if the well is provided with a casing to a depth of 50 feet or more and such casing extends to, and is sealed into, a confining layer separating the aquifer into which the well is drilled from the stratum of soil in which the disposal field is located.

3. The administrative authority shall approve a reduction in the distance from a well to a building sewer to a minimum of 15 feet if it can be demonstrated that the building sewer is watertight and there are no other practicable alternatives.

Amended by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Rewrote (a); deleted (b) through (e).

#### 7:10-12.13 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Well room".

#### 7:10-12.14 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Specific requirements for wells constructed in unconsolidated formations".

#### 7:10-12.15 (Reserved)

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (a)1, rewrote Table 3.

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Specific requirements for wells constructed in consolidated formations".

#### 7:10-12.16 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "General construction requirements for wells".

#### 7:10-12.17 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Well casings".

#### 7:10-12.18 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Well screens and gravel packing".

#### 7:10-12.19 (Reserved)

Amended by R.2000 d.354, effective August 21, 2000.

See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

Rewrote (g).

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Requirements for sealing the annular space of wells".

#### 7:10-12.20 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Well head requirements".

#### 7:10-12.21 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).

See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).

Section was "Pitless well installation".

#### 7:10-12.22 Test for yield and submission of well report

The well driller shall test each completed well for yield and shall complete and submit a well report, on a well record form provided by the Department with the issued well permit, to the Bureau of Water Allocation in the Department at PO Box 426, Trenton, New Jersey 08625-0426, in accordance with N.J.S.A. 58:4A-14 et seq.

and N.J.A.C. 7:9D. The well record form includes the following information: well permit number, well owner, name and address, well location address, well use, date constructed, well construction details (that is, depth, borehole diameter, casing(s), grouting, screen(s), and gravel pack), pumping test records, permanent pumping equipment, geologic log, and certification by the well driller.

Amended by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).  
See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).  
Inserted "and N.J.A.C. 7:9D".

#### 7:10-12.23 Springs

(a) An administrative authority shall approve the use of a spring only when construction of a well is not practicable, and provided the water derived from the spring is disinfected in accordance with N.J.A.C. 7:10-12.32.

(b) Any spring approved by the administrative authority as a water source pursuant to this section shall meet the following requirements:

1. Each spring shall be provided with an encasement of concrete or other durable material to prevent contamination of the spring. Such encasement shall be installed so as not to restrict the flow of water into the encasement;
2. The walls of the encasement shall be extended above the elevation of the surrounding ground to prevent the entry of surface water, and the roof shall have a watertight access cover so that the interior of the encasement may be inspected, cleaned, and/or repaired as necessary;
3. The encasement shall be provided with an overflow constructed so as to prevent erosion of the fill surrounding the structure. The overflow shall be constructed so as to prevent the entry of rodents and insects, and shall be downfacing so as to prevent the entry of rain water; and
4. The joint between the encasement wall and any pipe passing through the wall shall be constructed and installed so as to prevent the entry of surface water.

#### 7:10-12.24 Cisterns and dug wells

Cisterns and dug wells shall not be used as sources of water for public noncommunity or nonpublic water systems constructed after November 18, 1996.

#### 7:10-12.25 Surface water sources

(a) Surface water shall not be used as a water source for a nonpublic water system.

(b) The Department shall approve the use of surface water for a public noncommunity water system only if use of a well water supply is impracticable and if the surface water is treated pursuant to N.J.A.C. 7:10-12.33

(c) Public noncommunity water systems using surface water sources shall be constructed in accordance with N.J.A.C. 7:10-11.8 and shall meet the water treatment requirements of N.J.A.C. 7:10-12.33.

#### 7:10-12.26 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).  
See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).  
Section was "Design requirements for well pumping equipment".

#### 7:10-12.27 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).  
See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).  
Section was "Well pump down control".

#### 7:10-12.28 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).  
See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).  
Section was "Location requirements for pumping equipment".

#### 7:10-12.29 (Reserved)

Repealed by R.2001 d.313, effective September 4, 2001 (operative October 4, 2001).  
See: 32 N.J.R. 2832(a), 33 N.J.R. 3194(a).  
Section was "Pump controls".

#### 7:10-12.30 Water quality analysis and treatment

(a) Upon completion of construction of a water system, the owner of a public noncommunity or nonpublic water system shall sample and analyze the microbiological quality of the raw water from the system and submit a copy of the results of the analysis to the administrative authority.

1. If the water does not meet the microbiological requirements of the State primary drinking water regulations at N.J.A.C. 7:10-5, the owner shall disinfect the water in accordance with N.J.A.C. 7:10-12.32.

2. Regardless of the raw water microbiological quality, the owner of a nonpublic water system or public noncommunity water system that uses a spring or surface water source shall disinfect the water in accordance with N.J.A.C. 7:10-12.32.

(b) The owner of a public noncommunity water system shall sample and analyze the raw water from the system for inorganics, volatile organic compounds (VOCs), and radionuclides in accordance with N.J.A.C. 7:10-5 and for secondary contaminants in accordance with N.J.A.C. 7:10-7. If the system uses a surface water source, the administrative authority shall require the system owner to sample and analyze the water for disinfection by-products and pesticides regulated pursuant to N.J.A.C. 7:10-5.

(c) The owner of a nonpublic water system shall sample and analyze the raw water from the system for nitrates, iron, manganese, and pH. The administrative authority may require sampling and analysis for inorganic chemicals, volatile organic compounds, and/or radionuclides as appropriate based on the region and the aquifer in which the water source is located.

(d) The owner of the water system shall submit a copy of the results of the analyses conducted pursuant to (b) and (c) above to the administrative authority.

(e) Based on the results of the analyses submitted pursuant to (d) above, the administrative authority may require physical and chemical treatment of the water in accordance with N.J.A.C. 7:10-12.33.

(f) The owner of public noncommunity or nonpublic water system that uses a surface water source shall filter the water before it enters the distribution system using a filtration method approved by the Department. Public noncommunity water systems shall in addition meet the requirements of N.J.A.C. 7:10-9.

(g) All analyses required pursuant to this section shall be conducted at a certified laboratory, certified in accordance with N.J.A.C. 7:18 for the specific analytical method used.

(h) The administrative authority shall require the owner of a public noncommunity water system or nonpublic water system to provide treatment of the water when the water supply does not meet any of the maximum contaminant levels specified at N.J.A.C. 7:10-5.

(i) The administrative authority shall require the owner of a public noncommunity water system or nonpublic water system to provide treatment of the water when it determines that the exceedance of one or more of the standards established in the State Secondary Drinking Water Regulations, N.J.A.C. 7:10-7, causes adverse effects on consumers of that system's water.

Amended by R.2000 d.354, effective August 21, 2000.  
See: 31 N.J.R. 2717(a), 32 N.J.R. 3106(a).

In (c), inserted references to inorganic chemicals and radionuclides and deleted reference to radon.

#### **7:10-12.31 Chemical handling and chemical feed systems**

(a) General requirements for chemical handling and chemical feed systems are as follows:

1. Suitable means shall be provided to ensure proper and continuous application rate of chemical.
2. Variation of the feed rate shall not exceed five percent of the intended application rate.
3. Chemical solution feeders shall be located so as to prevent dust and fumes from entering other operating areas in the treatment plant.

4. Chemical solution shall not be introduced directly into any pipe or conduit under negative pressure or directly into a well.

5. An antisiphon device shall be installed on the chemical solution feed line. The device shall include an antisiphon valve to provide a vacuum break on the chemical solution feed line. The chemical feed line shall be looped to a level higher than the highest elevation of the chemical storage tank so as to prevent backsiphonage or drainage of the chemical solution into the treated water supply.

6. Each chemical solution feeder shall be equipped with a no-flow switch to prevent the feeding of chemical solution upon cessation of water flow.

(b) Regulations for chemical solution tanks are as follows:

1. When dissolving a solid treatment chemical, each chemical solution tank shall be provided with adequate agitation to keep the strength of the solution uniform.
2. Makeup water shall be introduced into the chemical solution tank through an air break or other approved method, to prevent back-siphonage.
3. Each chemical solution tank shall be equipped with a cover to prevent contamination and shall be of capacity sufficient to provide at least 24 hours worth of storage at normal operating feed rates.

(c) Chemical feed lines shall be equipped with clean-out connections, shall be easily accessible for repair or cleaning, shall be protected against damage and freezing, shall be corrosion resistant, shall be as short as possible, and shall be provided with adequate slope to permit draining.

(d) Where applicable, as determined by the administrative authority, safety equipment such as a shower, a U.S. Bureau of Mines approved respirator, rubber or neoprene gloves and apron, and goggles shall be provided.

#### **7:10-12.32 Disinfection of public noncommunity and nonpublic water systems**

(a) General regulations for disinfection are as follows:

1. Disinfection shall be accomplished using chlorination, ultra-violet light, or ozonation, in accordance with the methods described in (b), (c) or (d) below.
2. The owner of any public noncommunity water system with an extensive service area shall maintain a detectable disinfectant residual in the water distribution system. For purposes of this subsection, an extensive service area is 100 service connections or 1500 linear feet of water mains or gravity storage.
3. Chlorine disinfection shall be accomplished in accordance with the chlorine contact period and residual requirements set forth in N.J.A.C. 7:10-11.16 (e).

(b) Regulations for chlorination are as follows:

1. The administrative authority shall approve the use of gas chlorination for public noncommunity and nonpublic water systems only if the use of hypochlorite feed systems are impractical for the specific application.

2. The chlorinating device shall be capable of producing a chlorine residual after the contact period as required pursuant to N.J.A.C. 7:10-11.16(e)3. A chlorine residual test kit shall be used to verify that the correct application rate is maintained.

3. The chlorination device shall be protected from freezing.

4. Gas chlorinating devices shall be located in above-grade separate rooms with an outside entrance only and shall have proper ventilation including an exhaust fan near floor level with an outside switch. An observation window to permit visual inspection without opening the door of the chlorine room shall be provided. The doors of such rooms shall open outward and shall be provided with panic type hardware (that is, a push bar for opening the door) on the inside of the door. A room heater shall be provided. Chlorine scale and storage rooms shall be equipped in the same manner.

5. Operation of the chlorinating devices shall be synchronized with the operation of the well pump.

(c) Regulations for disinfection by ultra-violet light are as follows:

1. Ultra-violet tubes shall be jacketed so that a temperature of 105 degrees Fahrenheit is maintained.

2. The jacket on the ultra-violet light tubes shall be quartz or high-silica glass with similar optical characteristics.

3. The ultra-violet light disinfection unit shall be designed to permit frequent mechanical cleaning of the water contact surface of the ultra-violet light tube jacket without disassembly of the unit.

4. The maximum water depth in the disinfection chamber, measured from the ultra-violet light tube surface to the outer walls of the chamber, shall not exceed three inches.

5. Ultra-violet radiation at a level of 2,537 Angstrom shall be applied at all points throughout the disinfection chamber at a minimum rate of 16,000 microwatt seconds per square centimeter.

6. An automatic flow control valve, accurate within the expected pressure range, shall be installed to restrict flow to the maximum design flow of the ultra-violet disinfection unit.

7. An accurately calibrated ultra-violet light intensity meter, filtered to confine its sensitivity to the range of disinfection spectrum, shall be installed in the wall of the disinfection chamber at the point of greatest water depth from the light transmitting source.

8. A flow diversion valve or automatic shut-off valve controlled by the ultra-violet light intensity meter shall be installed so as to permit water flow into the water system only when the minimum radiation level specified at (c)5 is applied. When power is not being supplied to the unit, the valve shall be in a closed (fail-safe) position to prevent the flow of water into the water system.

9. The ultra-violet light disinfection unit shall be installed in a manner such that it cannot be bypassed.

(d) Rules for disinfection by ozonation are as follows:

1. Ozonation may be used for disinfection of any public noncommunity or nonpublic water system.

2. Ozonation shall not be used as a substitute for postchlorination if the water system is required to maintain a chlorine residual in the distribution system pursuant to (a) 2 above.

3. Equipment used for ozonation shall be durable and corrosion resistant.

#### 7:10-12.33 Chemical and physical treatment

(a) General requirements for chemical and physical treatment are as follows:

1. A public noncommunity water system using a surface water source is subject to the requirements of N.J.A.C. 7:10-11.8, 11.12, 11.13 and 11.14.

2. Treatment facilities shall be capable of producing water that meets the applicable State primary and/or secondary drinking water regulations at N.J.A.C. 7:10-5 and 7.

3. Treatment units shall be of sufficient capacity to produce the daily volumes of water required pursuant to N.J.A.C. 7:10-12.7.

4. All filter shells, ion-exchange pressure tanks and chemical solution feed drums shall be constructed of corrosion resistant materials or contain non-corrodible liners.

5. Point of entry treatment (POET) devices may be used to treat water in any public noncommunity or nonpublic water system. The Department recommends that such devices be certified to meet appropriate ANSI/NSF standards 42, 44, 53, 55, 58, and 62 as amended and supplemented, or the equivalent. POET devices shall also meet ANSI/NSF Standard 61 if used in public noncommunity water systems. In addition, POET devices shall meet the following requirements:

i. Each device shall be equipped with sampling water taps before and after the point at which treatment is applied;

ii. The manufacturer's specifications and the owner's manual for operation and maintenance of each POET device shall be available on-site at all times;

iii. The owner of the water system shall conduct an efficiency test of the device upon its installation. The administrative authority shall require the owner of a public noncommunity water system to conduct periodic water quality testing once every three months if the POET device is installed to remove primary contaminants.

6. Wastewater resulting from the backwashing or regeneration of filter media and/or ion exchange resin shall not be discharged to a sanitary sewer system except in accordance with the New Jersey Pollutant Discharge Elimination System rules, N.J.A.C. 7:14A, and with written approval from the appropriate sewerage authority.

(b) Regulations for corrosion control are as follows:

1. pH adjustment for corrosion control is recommended when the pH of the raw water is less than 6.5. The pH adjustment system used for corrosion control shall be capable of raising the pH to a minimum of 7.5 units.

2. A neutralizing filter consisting of a bed of graded limestone may be used to adjust pH.

3. Injection of alkaline chemicals may be used to adjust pH only if the following conditions are met:

i. Only soda-ash, lime, or caustic soda shall be fed by means of a positive displacement pump. Due to safety considerations, the Department does not recommend using caustic soda in small water systems and single dwelling water supply systems.

ii. Operation of the feed pump shall be synchronized with the operation with the well pump.

iii. Safety equipment including respirator, gloves, apron, shower and eye wash facilities shall be provided.

(c) Regulations for removal of iron and manganese are as follows:

1. Iron and manganese removal units shall include an oxidizing process (natural precipitation or chemical precipitation) followed by a filtration process.

2. Iron and manganese removal units which include an open aeration process shall be designed and constructed so as to minimize dust pickup. All air which enters the oxidizing unit shall pass through a corrosion-resistant screen of not less than 24 mesh in order to prevent the entry of insects. Forced air which enters the oxidizing unit shall pass through air particulate filters.

3. Iron and manganese removal units which include an ion exchange process (for example, water softening) shall be designed and constructed such that the treated water will not contain a sodium concentration in excess of 50 mg/l pursuant to N.J.A.C. 7:10-7. The treated water shall not be softened to zero hardness. Potassium regenerant may be used as an alternative to sodium regenerant.

(d) Packed column aeration (PCA) units or equivalent air strippers shall be capable of removing volatile organic compounds (VOCs) from at least twice the maximum levels found in the water to below the applicable MCLs. If the PCA unit is followed by a granular activated carbon (GAC) unit(s), the removal of VOCs may be achieved through the combined use of both treatment units.

1. Each air intake on forced aeration or mechanically induced aeration systems must be equipped with an air particulate filter.

2. Taps by which water can be sampled shall be placed before and after the PCA unit.

(e) Granular activated carbon (GAC) units used for the removal of VOCs shall meet with the following requirements:

1. Each GAC unit shall have a minimum carbon life (prior to VOCs breakthrough) of three months;

2. Taps by which water can be sampled shall be placed before and after each GAC unit tank; and

3. Only virgin GAC shall be used, except regenerated GAC may be used if such GAC was used previously only in potable water treatment plants and regenerated in facilities used only for potable water treatment plant filter media.

(f) Any type of water treatment not described in (a) through (e) above shall meet the requirements of N.J.A.C. 7:10-11.15, as applicable.

#### **7:10-12.34 General requirements for storage of finished water**

(a) Storage for finished water shall be an integral component of each public noncommunity and nonpublic water system.

(b) The location, size and type of finished water storage facility shall be such as to provide a minimum pressure of 20 psi under all flow conditions.

(c) All finished water storage facilities shall be designed to permit dewatering for cleaning and maintenance.

(d) Each reservoir, standpipe, or elevated tank shall be equipped with a watertight roof or cover and an overflow.

(e) Each hydropneumatic tank shall be equipped with a pressure relief valve which shall have a rated working pressure in excess of the maximum system pressure.

(f) Each vent shall be equipped with a downfacing elbow or mushroom-type cap and be fitted with an insect screen.

(g) Any protective coating in contact with water shall comply with ANSI/NSF Standard 61, as amended and supplemented, incorporated herein by reference, and shall be inert and non-toxic and shall not impart any taste, odor or color to the water.

(h) All finished water storage reservoirs, tanks and appurtenances shall be disinfected in accordance with N.J.A.C. 7:10-12.11.

#### 7:10-12.35 Required storage capacity

(a) Each single dwelling nonpublic water system shall be equipped with water storage capacity in accordance with a storage tank manufacturer's recommendations reflecting well yield, well pump capacity, and size of dwelling to be served.

(b) Each public noncommunity and nonpublic water system serving a nonresidential unit and/or multiple residential or nonresidential realty improvements equipped with hydropneumatic water storage facilities shall comply with the following requirements:

1. The capacity of the pumping equipment in a hydropneumatic storage system shall be at least 10 times the average daily water demand determined using Table 1 at N.J.A.C. 7:10-12.6.

2. The gross volume of the hydropneumatic tank, in gallons, shall be either at least ten times the capacity of the largest pump, rated in gallons per minute, or the gross volume recommended by the equipment manufacturer.

**EXAMPLE:** Assume a proposed water system has an average daily water demand, as determined using Table 1 at N.J.A.C. 7:10-12.6, of 10,000 gallons per day (gpd) or seven gallons per minute (gpm). The total capacity of the well and/or booster station pump(s) must be 70 gpm (10 times seven gpm) and the system must have a hydropneumatic tank capacity of 700 gallons (10 times 70 gpm).

(c) The administrative authority shall determine the minimum water storage capacity for nonpublic nonresidential water systems using gravity storage facilities.

#### 7:10-12.36 General requirements for distribution systems

(a) All service lines and distribution mains intended for year-round water service shall be covered with sufficient earth to prevent freezing, with the minimum depth of cover being three feet.

(b) All newly constructed service lines and distribution mains shall be disinfected before being placed in service in accordance with N.J.A.C. 7:10-12.12.

(c) So far as is practicable, distribution mains shall be laid in a loop system to eliminate deadends. The distribution system shall be equipped with hydrants or other flushing devices to permit water main flushing. Each deadend, if unavoidable, shall be provided with a flushing device or a valved outlet to which a temporary pipe may be affixed to discharge flushed water above ground.

(d) Every water service line shall be separated with undisturbed or compacted earth to a horizontal distance of at least five feet from any sanitary sewer, at least 10 feet from any septic tank, distribution box, disposal field or seepage pit, and at least 25 feet from any cesspool.

(e) All water mains and sanitary or industrial sewer lines shall be separated by a horizontal distance of at least 10 feet. If such lateral separation is not possible, the water and sewer lines shall be in separate trenches (step trenches are prohibited) with the top of the sewer line at least 18 inches below the bottom of the water main. At sewer line and water main crossings, the top of the sewer line shall be at least 18 inches below the bottom of the water main. If such vertical separation is not possible, then the water line shall be sleeved a distance of five feet to both sides of the crossing. Sewer service laterals are not subject to this requirement.

#### 7:10-12.37 Capacity and size of service lines

(a) The minimum inside diameter of any service line shall be three-quarter inches.

(b) The design capacity of every distribution main and every service line shall be such as to provide a minimum pressure of 20 psi at ground level under all flow conditions.

(c) A distribution main which serves a fire hydrant shall have a minimum inside diameter of six inches.

#### 7:10-12.38 Water crossings

(a) Each distribution main which spans a stream or water course or which is fastened to a bridge shall be of cast iron, ductile iron or steel, and shall be properly supported to maintain stability.

(b) Each distribution main which crosses under a stream or water course shall be at least three feet below the bed of the stream or water course, and shall be constructed of cast iron, ductile iron or steel or other suitable material.

#### 7:10-12.39 General requirements for the certification of new, altered or replacement nonpublic or public noncommunity water systems

(a) An application for certification of a new nonpublic water system or public noncommunity water system, alteration thereto, or replacement thereof, which includes a new or altered water source a new or altered water treatment method, or a significant distribution system expansion, shall be submitted by the owner of the water system in writing to the administrative authority on the application form, if any, provided by the administrative authority.