

CHAPTER 10

SAFE DRINKING WATER ACT

Authority

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

Source and Effective Date

R.1994 d.482, effective August 25, 1994.
See: 26 N.J.R. 2720(a), 26 N.J.R. 3833(a).

Executive Order No. 66(1978) Expiration Date

Chapter 10, Safe Drinking Water Act, expires on December 31, 1995.

Chapter Historical Note

Chapter 10, Safe Drinking Water Act, was originally filed and became effective prior to September 1, 1969. Subchapter 5, Licensing of Superintendents or Operators, was amended by R.1977 d.477 effective December 16, 1977. See: 9 N.J.R. 461(a), 10 N.J.R. 10(c). Subchapter 3 was amended by R.1978 d.21 effective January 3, 1978. See: 9 N.J.R. 115(b), 10 N.J.R. 61(b). Subchapter 3 was amended by R.1978 d.102 effective June 1, 1978 and by R.1978 d.182, effective July 1, 1978. See: 10 N.J.R. 146(d), 10 N.J.R. 279(b). Subchapters 1, 2 and 4 were repealed. Subchapter 3 was recodified to Subchapter 12, Subchapter 5 was recodified to Subchapter 13 and new rules were adopted at Subchapters 1 through 11 by R.1979 d.271 effective July 13, 1979. See: 11 N.J.R. 170(a), 11 N.J.R. 374(b). Subchapter 8 was repealed by R.1981 d.279, effective August 6, 1981. See: 13 N.J.R. 260(d), 13 N.J.R. 481(c). Rules concerning laboratory certification and standards of performance are found at N.J.A.C. 7:18. Pursuant to Executive Order No. 66(1978), Chapter 10 was readopted by R.1983 d.244, effective June 3, 1983. See: 15 N.J.R. 592(a), 15 N.J.R. 1019(c). Subchapter 13 was repealed and replaced by R.1984 d.284, effective July 2, 1984. See: 16 N.J.R. 959(a), 16 N.J.R. 1740(a). Subchapter 14 was originally adopted by R.1984 d.400, effective September 4, 1984. See: 16 N.J.R. 1301(a), 16 N.J.R. 2362(a). Subchapters 15 and 16 were originally adopted by R.1989 d.28, d.12, respectively, effective January 3, 1989. See: 21 N.J.R. 43(a) and 46(a). Pursuant to Executive Order No. 66(1978), Chapter 10 was readopted by R.1989 d.514, effective September 1, 1989. See: 21 N.J.R. 1945(a), 21 N.J.R. 3098(a). Notice of a petition for rulemaking was filed with the Office of Administrative Law on March 19, 1990. See: 22 N.J.R. 1275(a).

Pursuant to Executive Order No. 66(1978), Chapter 10 was readopted as R.1994 d.482. See: Source and Effective Date.

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

SUBCHAPTER 3. ENFORCEMENT AND PENALTIES

- 7:10-3.1 Civil enforcement actions
- 7:10-3.2 Administrative enforcement

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 Additional requirements
- 7:10-5.4 Reporting requirements
- 7:10-5.5 Record keeping

SUBCHAPTER 6. VARIANCES AND EXEMPTIONS

- 7:10-6.1 Variances
- 7:10-6.2 Exemptions
- 7:10-6.3 Disposition of variance and exemption applications
- 7:10-6.4 Renewal of variances and exemptions

SUBCHAPTER 7. SECONDARY DRINKING WATER

- 7:10-7.1 Authority, purpose and scope
- 7:10-7.2 Maximum upper and/or minimum lower levels of specified substances in drinking water
- 7:10-7.3 Monitoring

SUBCHAPTERS 8 THROUGH 9. (RESERVED)

SUBCHAPTER 10. PHYSICAL CONNECTIONS

- 7:10-10.1 Definitions
- 7:10-10.2 General
- 7:10-10.3 Approved physical connection specifications
- 7:10-10.4 Installation
- 7:10-10.5 Permit application procedure
- 7:10-10.6 Testing requirements and procedures
- 7:10-10.7 Facility changes or cancellations

SUBCHAPTER 11. STANDARDS FOR CONSTRUCTION OF PUBLIC COMMUNITY WATER SYSTEMS

- 7:10-11.1 Introduction
- 7:10-11.2 Material to be submitted
- 7:10-11.3 General requirements
- 7:10-11.4 Groundwater supplies
- 7:10-11.5 Surface water supplies
- 7:10-11.6 Pumping stations
- 7:10-11.7 Distribution systems
- 7:10-11.8 Distribution storage
- 7:10-11.9 Chemical handling and feeding
- 7:10-11.10 Miscellaneous treatment processes
- 7:10-11.11 Pretreatment
- 7:10-11.12 Filtration
- 7:10-11.13 Disinfection

SUBCHAPTER 12. STANDARDS FOR THE CONSTRUCTION OF PUBLIC NON-COMMUNITY AND NON-PUBLIC WATER SYSTEMS

- 7:10-12.1 Scope
- 7:10-12.2 Construction
- 7:10-12.3 Practice where rules do not govern
- 7:10-12.4 Definitions
- 7:10-12.5 General concepts

- 7:10-12.6 Deviations from standards
- 7:10-12.7 Water volume requirements
- 7:10-12.8 Sources of water
- 7:10-12.9 Frost protection
- 7:10-12.10 Physical connection
- 7:10-12.11 Priming systems
- 7:10-12.12 Disinfection of waterworks facilities
- 7:10-12.13 Distances
- 7:10-12.14 Well room
- 7:10-12.15 Geologic regions
- 7:10-12.16 Well construction within regions
- 7:10-12.17 General construction requirements for wells
- 7:10-12.18 Well casings
- 7:10-12.19 Well screens
- 7:10-12.20 Grouting of annular space
- 7:10-12.21 Well head
- 7:10-12.22 Pitless well installation
- 7:10-12.23 Records
- 7:10-12.24 Springs
- 7:10-12.25 Cisterns
- 7:10-12.26 Surface water supply
- 7:10-12.27 Design; pumping equipment
- 7:10-12.28 Location; pumping equipment
- 7:10-12.29 Pump controls
- 7:10-12.30 Pump down control
- 7:10-12.31 Need for treatment
- 7:10-12.32 Chemical handling and feeding
- 7:10-12.33 Disinfection
- 7:10-12.34 Chemical and physical treatment
- 7:10-12.35 General requirements for finished water storage
- 7:10-12.36 Required storage capacity
- 7:10-12.37 General requirements for distribution systems
- 7:10-12.38 Capacity and size; service lines
- 7:10-12.39 Water crossings
- 7:10-12.40 General requirements for certification
- 7:10-12.41 Certification of single dwelling water supply systems
- 7:10-12.42 Certification of non-public and public non-community water supply systems other than those serving single dwellings
- 7:10-12.43 State certification for 50 or more realty improvements

SUBCHAPTER 13. WATER SUPPLY AND WASTE-WATER COLLECTION AND TREATMENT SYSTEMS: EXAMINING AND LICENSING OF OPERATORS

- 7:10-13.1 Scope and construction of rules
- 7:10-13.2 Definitions
- 7:10-13.3 Examining board
- 7:10-13.4 Examinations
- 7:10-13.5 Advisory committee on training
- 7:10-13.6 Applications
- 7:10-13.7 Examination results
- 7:10-13.8 Fees
- 7:10-13.9 License renewal requirements
- 7:10-13.10 Licensed operator required, penalties
- 7:10-13.11 Reciprocity with other states
- 7:10-13.12 Records and reports
- 7:10-13.13 Conversion of licenses in effect on the effective date of these rules
- 7:10-13.14 System classification
- 7:10-13.15 Criteria needed to take the examination for each license

SUBCHAPTER 14. INTERIM SAFE DRINKING WATER ACT TESTING SCHEDULE FOR HAZARDOUS CONTAMINANTS BY PUBLIC COMMUNITY WATER SYSTEMS

- 7:10-14.1 Authority
- 7:10-14.2 Purpose of rules
- 7:10-14.3 Definitions
- 7:10-14.4 Program information
- 7:10-14.5 Severability

- 7:10-14.6 Initial testing requirements for 2(a) List
- 7:10-14.7 Periodic testing requirements for 2(a) List
- 7:10-14.8 Identification of 2(b) List (Reserved)
- 7:10-14.9 Initial testing requirements for 2(b) List (Reserved)
- 7:10-14.10 Periodic testing requirements for 2(b) List (Reserved)
- 7:10-14.11 Modification of periodic testing frequency by Commissioner
- 7:10-14.12 Analytical requirements
- 7:10-14.13 Reporting requirements
- 7:10-14.14 Recordkeeping
- 7:10-14.15 Violations and penalty provisions

SUBCHAPTER 15. FEES

- 7:10-15.1 Scope and authority
- 7:10-15.2 Purpose
- 7:10-15.3 Definitions
- 7:10-15.4 Applicability
- 7:10-15.5 Establishment of fee schedule
- 7:10-15.6 Payment of fees
- 7:10-15.7 Calculation of fees for public community water systems and bulk distribution systems
- 7:10-15.8 Calculation of fees for Physical Connection Permits

SUBCHAPTER 16. SAFE DRINKING WATER ACT MAXIMUM CONTAMINANT LEVELS FOR HAZARDOUS CONTAMINANTS

- 7:10-16.1 Scope and authority
- 7:10-16.2 Construction
- 7:10-16.3 Applicability
- 7:10-16.4 Definitions
- 7:10-16.5 Severability
- 7:10-16.6 Penalties
- 7:10-16.7 Maximum contaminant levels (MCLs) for hazardous contaminants
- 7:10-16.8 Compliance requirements and procedures
- 7:10-16.9 Laboratory testing
- 7:10-16.10 Public notification
- 7:10-16.11 Remediation requirements and procedures
- 7:10-16.12 Recordkeeping

SUBCHAPTER 1. GENERAL PROVISIONS

7:10-1.1 Authority

These regulations are promulgated pursuant to the authority of the New Jersey Safe Drinking Water Act, P.L. 1977, c.224; N.J.S.A. 58:12A-1 et seq. (hereinafter N.J.S.D.W.A.), which took effect on September 17, 1977.

Amended by R.1977 d.477, effective December 16, 1977.
See: 9 N.J.R. 461(a), 10 N.J.R. 10(c).

7:10-1.2 Scope, applicability and purpose

These regulations implement the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., by which New Jersey will assure the provision of safe drinking water to consumers, and by which New Jersey qualified for primary enforcement responsibility under the Federal Safe Drinking Water Act, (P.L. 93-523, 42 USC 300 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:

“Administrator” means the Administrator of the United States Environmental Protection Agency or his authorized representative.

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

“Commissioner” means the Commissioner of the Department of Environmental Protection or his designated representative.

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

“Department” means the Department of Environmental Protection.

“Federal Act” means the Safe Drinking Water Act, P.L. 93-523, 42 USC Section 300 et seq.

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

“Maximum contaminant level” means the maximum permissible level of a contaminant in water measured at the point at which water is delivered to 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, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

“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 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 system” means a water system that is not a public water system.

“Person” means any individual, corporation, company, firm, association, partnership, municipality, State agency or Federal agency.

“Primary drinking water regulation” means a regulation which:

1. Applies at a minimum to public water systems;
2. Specifies contaminants which, in the judgement of the Commissioner, may have any adverse effect on the health of persons;

3. Specifies for each such contaminant either maximum contaminant level if, in the judgement of the Commissioner, 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 Commissioner, it is not economically and technologically feasible to ascertain the level of such contaminant, each treatment technique known to the Commissioner which leads to a reduction in the level of such contaminant sufficient to satisfy the requirements of Section 4 of the New Jersey Safe Drinking Water Act, (N.J.S.A. 58:12A-4).

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.

“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 community water system.

“Public water system” means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves at least 25 individuals daily 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 “community water system” or a “noncommunity water system”.

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

“Secondary drinking water regulation” means a regulation applying to one or more water systems, and which specified the recommended upper and/or lower levels of substances that are necessary to protect the public welfare; such regulations 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.

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

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

Administrative Correction in definition of "national primary drinking water regulations" or "national regulations".
See: 23 N.J.R. 1150(b).

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

(a) Personnel of the Department may conduct on-site inspections and/or sanitary surveys of any water system, and any component part thereof, and may take samples, and inspect, copy or photograph any records required to be kept under the provisions of these regulations.

(b) The person conducting such inspection or sanitary survey 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 of 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 Division of Water Resources, Bureau of Potable 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 must so notify the Department in writing.

7:10-2.2 Department recordkeeping and reporting

The Department, through the Division of Water Resources, Bureau of Potable Water, shall keep such records, in such a manner, and for such times as shall be required by Section 142.14 of the National Interim or Revised Primary Drinking Water Regulations Implementation, as amended (40 CFR 142.14), and shall submit each report to the Administrator and make them available to the public as required by Section 142.15 thereof as amended (40 CFR 142.15).

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

The Commissioner shall cause to be prepared and maintained within the Bureau of Potable Water, a plan for the provision of safe drinking water under emergency circumstances. Such plan shall be reviewed and updated as necessary.

Statutory References

N.J.S.A. 58:12A-7.

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

Any public water system supplying water to consumers for potable purposes shall notify the Bureau of Potable Water at least 5 working days prior to undertaking any planned change in the plant or its operation that may either temporarily or permanently tend to deteriorate the quality of water furnished, or increase the likelihood of the delivery of polluted or impure water; and shall notify the Department by telephone at (609) 292-9619 during business hours, and (609) 292-7172 during non-business hours, within six hours of the occurrence of any emergency which may tend to lessen the quality of delivered water, or increase the likelihood of delivery of polluted or impure water.

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

(a) Whenever the Commissioner, in the exercise of his discretion, believes 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 prime source, distribution, or storage capacities, or inadequate pressure or volume, the Commissioner may prohibit, by order, such additional connections. Upon receipt of an order prohibiting additional water service connections, the supplier of water shall have fifteen (15) days to request a hearing on said order. At the hearing the supplier has the burden of showing the prohibition on additional connections should not be imposed.

(b) The request for a hearing shall be sent to:

Office of Legal Affairs
ATTENTION: Adjudicatory Hearing Requests
Department of Environmental Protection and Energy
CN 402
Trenton, New Jersey 08625-0402

Administrative change to (b).
See: 23 N.J.R. 3325(b).

SUBCHAPTER 3. ENFORCEMENT AND PENALTIES

7:10-3.1 Civil enforcement actions

A violation of any provisions of the New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.), any regulations promulgated thereunder, and any orders issued under authority thereof, may be referred to the Office of the Attorney General, who may institute a civil action in a court of competent jurisdiction for injunctive relief, or for a maximum penalty of not more than \$5,000 for each offense. Each day of a continuing offense shall constitute a separate and distinct offense. Said penalties may be awarded in a summary proceeding pursuant to the Penalty Enforcement Law (N.J.S.A. 2A:58-1 et seq.).

Statutory References

N.J.S.A. 58:12A-10(a)(b).

7:10-3.2 Administrative enforcement

The Department may issue such orders as are necessary to enforce the provisions of the New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) and the regulations promulgated thereunder. A violation of the provisions of such orders constitutes a violation of the Act, and violators are liable to civil penalties of not more than \$5000 for each offense; each day of a continuing offense constituting a separate and distinct offense. Such potential penalties may be compromised and settled in writing by the Department pursuant to section 10(c) of the State Act.

Statutory References

N.J.S.A. 58:12A-4(c), 9(i), 10(c).

SUBCHAPTER 4. DISINFECTION**7:10-4.1 Disinfection**

(a) Except in accordance with the provisions of subsection (b) of this section, every public community water system shall disinfect all water in accordance with section 13 of subchapter 11, in order to insure delivered water that is of microbiologically safe quality.

(b) Except for public community water systems that utilize surface waters, a system that serves 100 or fewer dwellings or properties may elect not to disinfect its water supply, provided that if it adopts this option it shall increase the number of microbiological samples taken from its distribution system to a minimum of two samples per month taken at biweekly intervals.

(c) Notwithstanding the provisions of subsection (a) and (b) of this section, any public community water system, or public non-community water system, may be required to disinfect its water supply if, in the opinion of the Department, said water supply is microbiologically unacceptable or questionable.

(d) Any public water system that purchases treated water from another public community 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 N.J.A.C. 7:10-5.2, 5.3 and 5.4, the Department hereby adopts in total the National Regula-

tions, including all requirements pertaining to siting requirements, maximum contaminant levels, monitoring and analytical requirements, reporting, public notification and record keeping, as the New Jersey Primary Drinking Water Regulations. Notwithstanding the Department's adoption of maximum contaminant levels set forth in the National Regulations, if any provision of N.J.A.C. 7:10-16 concerning maximum contaminant levels for hazardous contaminants is more stringent than the corresponding provision of the National Regulations, the provision of N.J.A.C. 7:10-16 shall control. Copies of the National Regulations may be obtained from either the Water Supply Branch, U.S. Environmental Protection Agency, 26 Federal Plaza, New York, New York, 10007, (212) 264-1800; or, Bureau of Safe Drinking Water, Division of Water Resources, CN-029, Trenton, New Jersey, 08625, (609) 292-5550.

Administrative Correction.

See: 23 N.J.R. 1150(b).

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 New Jersey Primary Drinking Water Regulations, the following provisions shall apply:

1. Turbidity:

- i. The Department may establish a monthly average turbidity MCL up to five turbidity units (5 T.U.) at a representative entry(ies) to the distribution system for a particular water system (hereinafter in this subsection referred to as a "turbidity exception") provided that the supplier of water can demonstrate to the satisfaction of the Department that the higher turbidity will not interfere with disinfection, prevent maintenance of an effective disinfectant agent throughout the distribution system, or interfere with microbiological determinations. (National Regulations, 40 CFR 141.13(a)).

- ii. In considering requests for a turbidity exception the Department will take into account the previous microbiological testing results of the water system, the degree of development in the watershed and its potential for contamination, and any history available to the Department of diseases suspected to be of waterborne origin that have occurred within the service area of the water system.

- iii. A request by a supplier of water for a turbidity exception shall be submitted in writing to the Bureau of Potable Water, Department of Environmental Protection, P.O. Box CN-029, Trenton, New Jersey, 08625, and shall include, as a minimum, the following:

(1) A report on a sanitary survey of the watershed, conducted within six months prior to the date of the request, listing probable sources of contamination.

(2) Results of a series of Standard Plate Count tests conducted on at least ten days during the thirty days prior to the date of the request. Each series shall comprise tests of the water prior to and immediately following disinfection and at least three tests of water collected from representative points within the distribution system, the locations of which are shown on a map of the distribution system.

(3) A daily record of chlorine residuals for a period of not less than thirty days immediately prior to the date of the request, indicating maintenance of a free chlorine residual of not less than 0.1 mg/l at representative point within the distribution system, the locations of which are shown on a map of the distribution system.

(4) A record of turbidity data for the entry point(s) to be considered for the turbidity exception showing that the turbidity, based on a monthly average over the twelve months immediately prior to the date of the request, does not exceed 5 T.U.

(5) Results of a series of microbiological tests conducted on at least five days during the twelve months immediately prior to the date of the request on days during which the turbidity of the delivered water exceeded 1 T.U. Such tests shall be on samples collected from the entry point(s) into the distribution system and shall be conducted by both the membrane filter and the fermentation tube methods.

(6) A map of the distribution system showing the locations from which samples of water were taken for Standard Plate Count and chlorine residual determinations as above mentioned.

iv. If the Department is satisfied, on the basis of the data submitted and upon its own judgment, that the granting of the turbidity exception will not interfere with disinfection, prevent maintenance of an effective disinfectant agent throughout the distribution system, interfere with microbiological determinations, or be a hazard to health, the Department may grant, in writing and with such conditions as it may deem to be applicable, the requested turbidity exception. Such exception shall be valid for a period not exceeding one year but, at the discretion of the Department, may be renewed for additional periods each not exceeding one year, if requests therefor, accompanied by the required supporting data, are submitted for each renewal.

v. The Department may revoke the turbidity exception at any time upon a finding that the conditions under which such exception may be made pursuant to the provisions of 40 CFR 141.13(a) of the National Regulations are violated.

2. Microbiological:

i. Public community and noncommunity water systems that are required to take less than four microbiological samples per month shall, unless otherwise required by the Department, determine compliance on sampling during a three-month period (National Regulations, 40 CFR 141.14(c)). At its discretion the Department shall notify, in writing the owners of any public community and noncommunity water systems that they shall be required to base compliance upon sampling during a one-month period.

ii. A community water system serving 25 to 1,000 persons shall not be permitted to reduce the microbiological sampling frequency as allowed by 40 CFR 141.21(b) of the National Regulations to no less than one per quarter on the basis of a history of no coliform bacterial contamination and on a sanitary survey by the State showing the water system to be solely supplied by a protected ground source and free from sanitary defects.

iii. A noncommunity water system shall not be permitted to reduce the microbiological sampling frequency to less than one sample per quarter on the basis of a sanitary survey, as provided for in 40 CFR 141.21(c) of the National Regulations.

iv. The substitution of chlorine residual monitoring for microbiological sampling by the suppliers of water for community or noncommunity water systems shall not be acceptable. (National Regulations, 40 CFR 141.21(h)).

3. Inorganics: Unless required by the Department, in writing, to conduct more frequent sampling, noncommunity water systems shall repeat sampling and analyses for nitrate not less frequently than at three-year intervals (National Regulations, 40 CFR 141.23(a)(3)).

4. Organics: Community water systems utilizing surface sources shall repeat sampling and analyses for organics not less frequently than at three-year intervals. Such sampling shall be conducted during the period April 1 through September 30 of the year in which the samples are collected. (National Regulations, 40 CFR 141.24).

5. Substitution of previous analyses not accepted: The substitution of inorganic, organic and radionuclide analyses, taken prior to the effect date of the National Regulations, shall not be accepted. (National Regulations, 40 CFR 141.23(a), 141.24(d) and 141.26(a)(2)).

6. Monitoring of consecutive systems:

i. Every community water system that purchases all of its water from another community water system shall monitor its system for microbiological quality with the applicable frequency required by 40 CFR 141.21(b) of the National Regulations, according to the population served by the system that purchases the water; and shall monitor its system for inorganics and radionuclides with the same frequency as is required of the system from which the water is purchased. (National Regulations, 40 CFR 141.29).

ii. Every community water system that purchases more than fifty percent of its annual water requirements from another community system that utilizes a surface source shall monitor its system for organics with the same frequency as is required of the system from which the water is purchased. (National Regulations, 40 CFR 141.29).

7. Other discretionary provisions: In all other cases in which the State may exercise discretion under the provisions of the National Regulations, the supplier of water shall make appropriate requests, in writing, to the Bureau of Potable Water, Division of Water Resources, P.O. Box CN-029, Trenton, New Jersey, 08625 for consideration of such alternate provisions. Such discretionary powers are included in, but may not be limited to, 40 CFR 141.13(a), 141.21(d)(4), 141.25(a)(3), 141.26(b)(4)iv, and 141.27 of the National Regulations.

7:10-5.3 Additional requirements

(a) Maximum contaminant levels rules are as follows.

1. The maximum contaminant level for fluoride shall be 2.0 mg/l, which is based on the annual average of the maximum daily air temperature for central New Jersey.

2. The maximum contaminant levels for coliform bacteria applicable to all nonpublic water systems are as follows:

i. When the membrane filter technique is used:

(1) Organisms of the coliform group shall be absent in the standard portion of 100 ml when only one single sample is examined.

(2) In a series of samples the arithmetical mean density of organisms of the coliform group shall not exceed one colony per 100 ml.

ii. When the multitube fermentation technique is used:

(1) Organisms of the coliform group shall be absent in all five of the standard 10 ml portions constituting the standard sample when only one single sample is examined.

(2) In a series of samples not more than ten percent of the standard 10 ml portions shall show the presence of organisms of the coliform group.

3. The maximum contaminant levels for turbidity, inorganics, organics and radionuclides shall apply to any public water system or nonpublic water system upon a finding by the Department that such is necessary for the protection of health.

(b) Monitoring and analytical requirements are as follows.

1. The monitoring and analytical requirements for determining compliance with the maximum contaminant

levels shall be as required by the National Regulations, or these Regulations, as applicable; except that at the discretion of the Department additional monitoring may be required for specific parameters, or the monitoring frequency may be increased, to meet special requirements for specific water systems.

2. Except for individual water systems, all nonpublic water systems shall be monitored and tested for microbiological quality not less frequently than each quarter. Such monitoring shall be the responsibility of, and at the expense of, the owner of the system. The samples shall be tested at a laboratory certified pursuant to the provisions of subchapter 8 of this chapter, and the results shall be maintained on the premises of the nonpublic water system for review, as may be required, by a representative of the Department, or the local board of health.

7:10-5.4 Reporting requirements

(a) Except where a shorter reporting period is required by the National Regulations or by the provisions of this section, the supplier of water from a public water system shall report to the Department, within the first ten days of the month following the month in which any test, measurement or analysis is made pursuant to these regulations, the result of that test, measurement or analysis. Such reports shall be submitted in a format prescribed by the Bureau of Potable Water, and on forms available from same, to:

New Jersey Department of Environmental Protection
Division of Water Resources
Bureau of Potable Water
P.O. Box CN-029
Trenton, New Jersey 08625

(b) The supplier of water from a public water system shall report by telephone (609) 292-5550 within 48 hours, to the Bureau of Potable Water, the failure to comply with any primary drinking water regulation, including failure to comply with any monitoring requirement.

(c) The supplier of water from a public noncommunity water system which is not in compliance with any primary drinking water regulation, schedule of compliance of any variance or exemption, or fails to comply with any monitoring requirement shall immediately post the notice of such failure, prescribed as to form and content by the Department, in a conspicuous place where it is most likely to be seen by consumers. This notice shall remain posted until the Department determines the public noncommunity water system has complied with the regulations, schedules, or monitoring requirements.

(d) The supplier of water is not required to report analytical results to the Department where the sample has been taken by State personnel and where the State laboratory

performs the analysis and reports the results directly to the Bureau of Potable Water.

7:10-5.5 Record keeping

In addition to the records required to be kept and maintained pursuant to the National Regulations, 40 CFR 141.33, the supplier of water shall maintain such other records as may be required by the Department.

SUBCHAPTER 6. VARIANCES AND EXEMPTIONS

7:10-6.1 Variances

(a) The Commissioner may grant one or more variances from a maximum contaminant level to any public water system 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 Commissioner 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 Commissioner may grant to any public water supply 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 variances will not result in an unreasonable risk to the health of the persons served by the supply. A variance issued pursuant to this subsection shall be conditioned on such monitoring and other requirements as the Commissioner may prescribe.

(c) Requests in writing for Variances shall be sent to the Bureau of Potable Water, Division of Water Resources, N.J.D.E.P.; giving reasons and justification for such request.

(d) The Commissioner shall act on any variance request within 90 days of receipt of a request deemed complete. In determining whether a variance should be granted, the following factors shall be considered.

1. In determinations on variances from 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.

- ii. Cost and other economic considerations such as implementing treatment, improving the quality of the source water, or using an alternate source.

2. In determinations on variances from treatment techniques deemed to be unnecessary to protect health:

- i. Quality of the water source including water quality data and pertinent sources of pollution.

- ii. Source protection measures employed by the public water system.

7:10-6.2 Exemptions

(a) The Commissioner may grant to any public water system one or more exemptions from requirements respecting maximum contaminant levels or treatment technique requirements, or from 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 requirement.

2. The public water system was in operation on the effective date of such contaminant level or treatment technique; and

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

(b) Requests in writing for exemptions shall be sent to the Bureau of Potable Water, Division of Water Resources, New Jersey Department of Environmental Protection; giving reasons and justifications for such requests.

(c) The Commissioner shall act on any exemption request within 90 days of receipt of a request deemed complete. In the determination of whether the system is unable to comply due to compelling factors, the following factors shall be considered:

1. The 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; and

3. The economic feasibility of compliance.

7:10-6.3 Disposition of variance and exemption applications

(a) If the Commissioner intends to deny the application for an exemption or variance, he shall so notify the applicant in writing and state the ground therefor. Such notice shall afford the applicant the opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Commissioner. The Commissioner shall make his final determination on the request within 30 days of receipt of such additional information or argument. If no additional information is presented within the required time, the Commissioner may thereafter issue a denial of the application.

(b) Grants of variances or exemptions rules are as follows.

1. Form:

i. If the Commissioner grants a variance or exemption, after satisfaction of the public notice and hearing requirement, if any, specified herein; he shall notify the applicant of the grant in the form of a written order. Said 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.

ii. The order granting a variance to a maximum contaminant level (see N.J.A.C. 7:10-6.1(a)) or an exemption shall provide that the variance or exemption will be terminated when the system comes into compliance with the applicable maximum contaminant level, and may be terminated by the Commissioner upon a finding that the system has failed to comply with any requirements of a final schedule made applicable to the system.

iii. The order granting a variance to a specified treatment technique (see N.J.A.C. 7:10-6.1(b)), shall provide that the variance may be terminated 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 public water system has failed to comply with monitoring and other requirements prescribed by the Commissioner as a condition to the granting of the variance.

2. Notice to the public:

i. Prior to issuing an order granting a variance or setting a compliance schedule for either a variance or an exemption, the Commissioner shall provide public notice of his intent, 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. No opportunity for public hearing will be provided on the decision to grant an exemption.

ii. The public notice of opportunity for a hearing on the proposed granting of a variance or compliance schedule shall be calculated to provide broad notice and shall consist of at least the following:

(1) Publication in the New Jersey Register; and

(2) Publication in a newspaper of general circulation in the area served by the public water system.

iii. The public notice of intent to grant a variance or compliance schedule shall include at least the following:

(1) A summary of the proposed variance or compliance schedule.

(2) A statement that interested and affected parties may request, in writing, a public hearing within 30 days after issuance of public notice. The notice shall include a statement of the address to which such request should be sent, and a statement that requests for public hearings must include the name, address, and telephone number of the person or organization making the request, a short statement of the requestor's interest in the matter and the information he intends to produce at hearing, and the requestor's signature.

3. Public hearings:

i. The Department shall grant requests for hearings on variances or compliance schedules when it determines, after reviewing the information presented in the request, there is a reasonable likelihood of useful information being produced at a hearing.

ii. If a hearing is to be held on a proposed variance or compliance schedule, the Department shall give the requestor and the affected public water system 15 days advance notice. Additionally, notice of the hearing shall be circulated at least as broadly as was the notice of the proposed granting of a variance or compliance schedule.

iii. Hearings on proposed variances or compliance schedules shall be conducted before a Hearing Officer, in an informal, orderly and expeditious manner. The Hearing Officer's report shall be submitted to the Commissioner for final determination on the matter.

4. Decision to grant variance or exemption:

i. Effective date:

(1) If a public hearing has been held on a proposed grant of a variance or schedule of compliance, the Commissioner shall, within 30 days after the termination thereof, confirm, revise or rescind the proposed variance or schedule of compliance. If no public hearing has been held, the variance or schedule of compliance shall become effective 30 days after notice of opportunity for hearing was given pursuant to N.J.A.C. 7:10-6.3(b)2.

(2) Exemptions shall become effective upon receipt of the order granting them.

ii. Notification to administrator: The Commissioner shall promptly notify the Administrator of the United States Environmental Protection Agency of all variances and exemptions granted. Such notification shall contain the reason for the variance or exemption, the bases for the findings the Commissioner was required to make before granting the variance or exemption, and shall document the need for the variance or exemption.

iii. Compliance schedules:

(1) Proposed schedule:

(A) The Commissioner, within one year from issuing an order granting a variance or exemption, shall propose a compliance schedule for inclusion therein. Such schedule shall include dates for attainment of each step toward compliance; and where applicable, dates by which arrangement for an alternative raw water source or improvement to an existing source will be completed; dates of connection thereto; and dates by which final compliance is to be achieved. In addition, said schedule shall provide for implementation of control measures, including interim control measures, for each contaminant for which the variance or exemption is granted.

(B) Failure of a supplier of water to meet a compliance schedule date, or to comply with any other condition therein, shall be adequate grounds for summary termination of the variance or exemption at the discretion of the Commissioner, and may be considered a violation under the Safe Drinking Water Act.

(2) Public hearing: Before a final schedule of compliance for a variance or exemption may be imposed, the Commissioner shall provide public notice of the opportunity for public hearing hereon. The notice and hearing shall be as described in this subsection.

7:10-6.4 Renewal of variances and exemptions

Variances and exemptions will be granted for the period of time stated therein, and must be renewed in order to continue in effect beyond that time. The maximum duration of a variance is 5 years. Renewals of variances or exemptions may be allowed in the Commissioner's discretion. Renewal applications should be made at least 6 months prior to termination of the variance or exemption, to assure adequate time for the renewal process.

SUBCHAPTER 7. SECONDARY DRINKING WATER

7:10-7.1 Authority, purpose and scope

These secondary regulations, promulgated pursuant to Section 4(a) of the New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-4(a)), are recommended standards for potable water. These regulations apply to any substance in drinking water which may adversely affect the taste, odor, or appearance of such water, or which may otherwise adversely affect the public welfare. N.J.A.C. 7:10-7.2 specifies the upper and/or lower levels of substances in drinking water required to protect the public welfare. These standards may be required to be met by any water supply when the administrative authority having jurisdiction over the water supply finds a need therefor. The range between the upper and/or lower levels of substances in drinking water as specified in N.J.A.C. 7:10-7.2 is the advisable range for these substances as delivered to the free-flowing outlet of the ultimate user of a public or nonpublic water system.

7:10-7.2 Maximum upper and/or minimum lower levels of specified substances in drinking water

(a) The following are the recommended upper levels of the listed substances in drinking water, which levels should not be exceeded; and/or the recommended lower levels of the listed substances in drinking water which levels should be met or exceeded. Failure of the water supply to fall within the range listed for the substance or meet the prescribed level may constitute grounds for unacceptability of the water supply, if in the judgement of the authority having jurisdiction, which substances either singly or in combination, would render the water unduly corrosive, unpalatable, or aesthetically objectionable.

1. Physical characteristics:	Recommended upper limits	
Color	10 Color Units (Standard Cobalt Scale)	
Corrosivity	Within ± 1.0 of the optimum pH as determined by the Langelier Index; or by another method acceptable to the Department	
Odor	3 Threshold Odor Number	
Taste	No objectionable taste	
2. Chemical characteristics:	Rec. upper limits	Rec. lower limits
ABS/L.A.S.(1)	0.5 Mg/l	
Chloride	250.0 Mg/l	
Copper	1.0 Mg/l	
Fluoride(2)	—	1.0 Mg/l
Hardness (as CaCO ₃)	250.0 Mg/l	50.0 Mg/l
Iron	0.3 Mg/l	
Manganese(3)	0.05 Mg/l	
Sodium(4)	50.0 Mg/l	

Sulfate	250.0	Mg/l
Total Dissolved Solids	500.0	Mg/l
Zinc	5.0	Mg/l

Notes:

(1) Alkyl-Benzene-Sulfonate and Linear-Alkyl-Sulfonate, or similar Methylene Blue Reactive Substances contained in synthetic detergents.

(2) Note that a maximum containment level for fluoride is included in the State Primary Drinking Water Regulations. The recommended lower limit applies only to those water supplies in which the fluoride concentration is artificially adjusted.

(3) The limits for iron and manganese may be raised to 0.6 Mg/l to 0.1 Mg/l respectively if a sequestering treatment is provided. However, when either of these higher limits is exceeded in the raw water of a public community water system, the water shall be treated so as to reduce the iron concentration to below 0.3 Mg/l and/or the manganese concentration to below 0.05 Mg/l.

(4) Significant only for consumers requiring a low sodium diet.

3. Biological characteristics: water intended for potable purposes shall be free from:

- i. Visible organisms such as algae, algal diatoms, crustaceans, arachnids, and larvae.
- ii. Those micro-organisms which render the water unpalatable or unaesthetic to the consumer.

7:10-7.3 Monitoring

(a) When a public community water system is provided with treatment facilities specifically for pH adjustment and/or iron and/or manganese removal, the supplier of water shall conduct analyses with a minimum frequency of once daily for pH, iron or manganese, as applicable, on samples of water at the point(s) of delivery into the distribution system. Such analyses need not be conducted in a certified laboratory.

(b) In addition, public community water systems shall be sampled and analyzed for the parameters listed in the physical and chemical characteristics at intervals no less frequent than the monitoring being performed for inorganic chemical contaminants listed in the Primary Drinking Water Regulations. The analyses shall be performed by a laboratory certified by the Department pursuant to subchapter 8 of this chapter.

(c) More frequent samples from public water systems for specific parameters shall be taken if required by the Department, and, with the permission of the Department, may be analyzed by the supplier of water.

(d) Monitoring of nonpublic water systems shall be at a frequency directed by the local health department.

SUBCHAPTERS 8 THROUGH 9. (RESERVED)

SUBCHAPTER 10. PHYSICAL CONNECTIONS**7:10-10.1 Definitions**

The following words and terms, when used in this subchapter, shall have the following meanings unless the context clearly indicates otherwise.

“Approved Physical Connection Installation” means a double check valve assembly or a reduced pressure zone backflow preventer assembly which is designed and installed in accordance with these regulations.

“Double Check Valve Assembly” means a backflow prevention device consisting of two independently acting check valves, internally force loaded to a normally closed position between two tightly closing shut-off valves, and with means of testing for tightness.

“Internal Inspection” means the dismantling of the check valves or the reduced pressure zone backflow preventer to visually inspect the integrity mechanism of the device and the clappers, discs, facing rings, etc.

“Reduced Pressure Zone Backflow Preventer Assembly” means a backflow prevention device consisting of two independently acting 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 means of venting to atmosphere internally loaded to a normally open position between two tightly closing shut-off valves and with means for testing for tightness of the checks and opening of relief means.

“Unapproved Water Supply” means any water source of supply which is not a Public Community Water System.

7:10-10.2 General

(a) The purpose and intent of these regulations are to protect a Public Community Water System, from backflow from a supply which may be contaminated; of questionable or unknown quality; or over which the water purveyor has little or no control.

(b) The requirements contained in these regulations are not to be confused with the requirements of the Plumbing Subcode of the New Jersey State Uniform Construction Code, N.J.A.C. 5:23-3.5, for the prevention of illegal plumbing cross-connections, nor with any 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 possible illegal plumbing cross-connections.

(c) An approved physical connection installation shall be installed, and a permit obtained from the Department of every physical connection between a public community water system and any unapproved water supply; or, except as mentioned below, where dual but physically separate piping where one is from a public community water system and the other is from an unapproved water supply, enter a common building. An approved physical connection installation is not required where the piping from the unapproved water supply serves only a fire protection system which is not interconnected with a public community water system.

(d) When premises are supplied by water as described in subsection (c) of this section, each and every pipe conveying water from the Public Community Water System into the premises shall be protected by means of an approved physical connection installation in accordance with these regulations.

(e) Any representative of the Department, Local Health Department or the owner of the Public Community Water System, who shall produce proper identification upon request, shall have a right of entry during regular business hours for the purpose of conducting an inspection and/or test of an approved physical connection installation; or investigating suspected violation of these regulations; or for verifying information submitted to the Department.

(f) Both the Department of Environmental Protection and the owner of the Public Community Water System shall have the right to disallow the installation of an approved physical connection. Except in extenuating circumstances, an approved physical connection installation shall not normally be permitted in a private residence.

(g) All permits shall expire March 31 of each year, unless otherwise specified in the permit.

(h) All applications for permits, (original or renewal) shall be made on forms supplied by the Department.

(i) All applicants for permits for initial and renewal of physical connections shall pay the fee assessed pursuant to N.J.A.C. 7:10-15.

Amended by R.1988 d.28, effective January 3, 1989.
See: 20 N.J.R. 142(a), 21 N.J.R. 43(a).
Added (i).

7:10-10.3 Approved physical connection specifications

(a) A Double Check Valve Assembly or a Reduced Pressure Zone Backflow Preventer Assembly shall be the only acceptable means of preventing backflow in accordance with these regulations.

(b) Where the unapproved water supply is derived from any surface source or a known contaminated source or where the premises is a hospital, sewage or industrial waste treatment plant or pumping station, or is a commercial, industrial or manufacturing installation wherein liquids, vapors, gases, or chemicals of unsafe, unknown or questionable quality are handled, the approved physical connection installation shall be of the Reduced Pressure Zone Backflow Preventer Assembly type. The provisions of this subsection shall not apply to a physical connection satisfactorily operated under a current permit.

1. In all other instances the approved physical connection installation may consist of with a Double Check Valve Assembly or a Reduced Pressure Zone Backflow Preventer Assembly.

(c) Any device used in accordance with these regulations shall be constructed as follows.

1. For devices up to and including nominal size four inches, the check valves or the reduced pressure zone backflow preventer shall be of durable, non-toxic plastic, all bronze, or all brass construction.

i. For devices of larger size, the check valves, or the reduced pressure zone backflow preventer, shall be constructed as described in paragraph 1 or constructed of cast iron lined with brass, bronze, epoxy resin, stainless steel, or other durable non-toxic, noncorrodible material acceptable to the Department.

2. The clappers, discs or poppets, hinges, bushings, and seatings of the check valves 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.

3. Facing rings of the clappers, poppets or discs, or differential relief valves, shall be composed of molded natural or synthetic rubber or neoprene of even thickness, smoothfaced, and with good water-absorption resistance and aging properties, and shall be so designed as to provide a positive seal against the backflow of water through the device.

4. Such applicable pressure gauges as are shown in Figures 2 and 3 in respect of a Double Check Valve Assembly shall be permanently installed in the positions indicated, and shall be so mounted as to facilitate observation.

5. Every reduced Pressure Zone Backflow Preventer Assembly shall be provided with such supplies, test cocks, tees and elbows and a gauge as shown in either Figure 4 or Figure 5 to facilitate the testing requirements, and shall be maintained on the premises and be readily available for the testing of the device.

6. The pipe conveying water from the differential relief valve of a Reduced Pressure Zone Backflow Preventer shall be of the same, or larger, diameter as that of the relief port, and shall maintain the same diameter to its point of discharge. The point of discharge shall not be less than twice the diameter of the relief pipe above the adjacent floor level.

(d) Conditions include the following.

1. The operating characteristics of all devices used for approved physical connection installations shall meet the following conditions:

i. The turbulence in the device shall not be excessive for flow rates up to the rated flow.

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

iii. The device shall not cause water hammer, nor be adversely affected by water hammer arising from an outside condition.

iv. Each check valve shall permit no leakage in a direction reverse to normal water flow.

2. In addition to compliance with the requirements of paragraph 1 of this subsection, the operating characteristics of all Reduced Pressure Zone Backflow Preventers shall meet the following conditions:

i. The device shall operate to maintain the pressure in the zone between the two check valves at less than the pressure on the Public Community Water System side of the device. At cessation of normal flow the pressure between the check valves shall be less than the Public Community Water System pressure. In case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere.

ii. When the pressure in the zone between the two check valves is two pounds per square inch (2 p.s.i.) or less, the relief valve shall open to the atmosphere thereby providing an air gap in the device.

iii. The differential pressure relief valve shall open and close positively and quietly, and shall not spit excessively under normal fluctuations of flow rate or pressure.

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 the premises; shall be located as close to the meter as is reasonably practicable; and shall be prior to any other connection, unless that connection is also protected by means of an approved physical connection installation.

(b) The approved physical connection installation shall be located so as to permit easy access and provide adequate and convenient space for maintenance, inspection, and testing, and where no part of the device will be submerged or subjected to freezing temperatures.

(c) Further installation rules are as follows.

1. A Double Check Valve Assembly should not be installed in a pit or vault unless there is no reasonable practicable alternative. A Reduced Pressure Zone Backflow Preventer Assembly shall not be installed in a pit or vault except when specifically permitted by the Department under exceptional circumstances where an above-grade installation is not reasonably practicable. Every pit or vault in which an approved physical connection installation is located shall be of watertight construction, shall be so located and constructed as to prevent the danger of flooding, and shall be maintained free from standing water by means of either a sump or sump pump or a

suitable drain. Said sump pump or drain shall not be connected to a sanitary sewer and shall not be located or constructed so as to permit flooding of the pit or vault by reverse flow from its point of discharge. Appropriate access hatches, access ladder and adequate lighting shall be provided to permit maintenance, inspection and testing.

2. In those instances where the Department permits the installation of a Reduced Pressure Zone Backflow Preventer Assembly in a pit or vault, the said assembly shall be installed in such a manner that the port from the differential relief valve is piped above grade and terminates at least twelve inches above grade with a downfacing elbow. A drain cock shall be provided on the discharge pipe immediately adjacent to the unit and shall remain open as a visual check for a minor leak from the differential relief valve. (Figure I).

(d) Except for those devices specifically designed for installation in a vertical position, any device used as an approved physical connection installation shall be installed in the horizontal position. Those devices which are 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 the bypass is also protected by an approved physical connection installation.

7:10-10.5 Permit application procedure

(a) Original permit rules are as follows.

1. Prior to the construction of a physical connection installation, the owner of the premises where the installation is to be made, shall obtain conceptual approval from the owner of the public community water system. In addition the owner of the premises shall notify the local health department of the municipality in which the installation is proposed.

2. The submission to the owner of the public community water system shall include:

i. A letter outlining all pertinent details concerning the installation including the size, type, manufacturer and specifications of the device proposed, location of device, source of unapproved water supply, use of the approved and unapproved water supplies, location of premises, type of operation conducted on the premises, and the need for the device.

ii. A sketch or drawing showing the building layout with street locations, location of unapproved source(s) of water supply, all service connections from the Public Community Water Supply, location of device(s) and sufficient longitudinal and transverse sections to adequately explain the installation.

3. After conceptual approval has been granted by the owner of the public community water system, and the

device(s) has been installed in accordance with the approved drawings, the owner of the premises shall contact the water purveyor and the local health department so that the device(s) can be inspected and pressure tested in accordance with the provision of N.J.A.C. 7:10-10.6 for acceptability.

4. Upon satisfactory completion of the inspection and testing the said local authorities shall sign the application form in the appropriate location, and the owner of the premises shall mail the completed application form to the Department.

5. Upon receipt of the completed application form, a representative of the Bureau of Potable Water shall contact the owner of the premises so that a state inspection and test of the installation can be made.

6. Following the satisfactory inspection and testing by the Bureau an original permit shall be issued.

Note: If a mutually agreeable time can be arranged, the inspections required in paragraphs 3 and 5 of this subsection can be combined.

(b) Renewal permit rules are as follows.

1. Prior to the expiration of a permit, renewal application forms shall be mailed by the Bureau of Potable Water, Department of Environmental Protection to every person holding an existing physical connection permit.

2. The owner of the physical connection installation shall be responsible for the proper completion of the renewal application form and the results of tests conducted under N.J.A.C. 10.6 shall be accurately recorded thereon.

3. If the local health department and the owner of the public community water supply have determined, through the inspection and tests conducted, that the installation was functioning satisfactorily, they shall affix their signatures to the renewal application form and the owner of the physical connection installation shall forward the completed application to the Department.

4. The completed renewal application will be reviewed by the Department and, if found to be satisfactory, a renewal permit shall be issued.

7:10-10.6 Testing requirements and procedures

(a) Before a permit will be approved for renewal, all installations shall undergo the following.

1. A test for tightness under prevailing pressure conditions at least every three months.

2. Except as provided in the next sentence, an internal inspection within six months prior to the application for renewal and, after reassembly, a test for tightness to assure the integrity of the device. A Reduced Pressure Zone Backflow Preventer Assembly need not be subjected to a routine internal inspection except for routine maintenance as specified by the manufacturer or in those cases where a problem is known to exist or when such inspection is required by the water purveyor.

(b) The tests outlined in subsection (a) of this section shall be conducted by a representative of the owner of the installation in the presence of a representative of the local health department and/or the water purveyor. Tests conducted solely by a representative of the owner shall not be acceptable.

(c) Tests conducted solely by representatives of the Department, as a check, shall not be considered as a substitute for the tests required in subsection (a) of this section.

(d) Procedures for testing a Double Check Valve Assembly are as follows.

Note: A spacer two feet or more in length is required on installations three inches or less in diameter. No spacer is required on larger installations. (See Figures 2 or 3.)

1. Open valves M and N.
2. Blow out test drains D and E to remove any sediment or scale that may have accumulated.
3. Blow off the petcocks under the gauges to be sure that the gauge connections are clear.
4. Close gate valve M.
5. Open test drain D. Pressure on gauge A should drop to zero, and gauge B will drop part way due to compression of facing on clapper of check valve F. Cessation of flow from test drain D and sustained pressure reading on gauge B indicate that check valve F is properly seated.
6. With test drain D still open, open test drain E. Gauge B will drop to zero and gauge C should remain stationary indicating that check valve G is properly seated.
7. Close test drains D and E, and then open gate valve M to full open position. This procedure indicates the results which will be obtained when gate valves, check valves and test drains are tight. The test should be abandoned if any of these leak. Slight variation in the procedure may be necessary in certain cases. Be sure to leave valves M and N in full open position on fire protection systems.

(e) Procedures for testing a Reduced Pressure Zone Backflow Preventer Assembly are as follows.

1. For testing equipment shown in Figure 4, install test equipment as shown in Figure 4.
 - i. Close gate valve B. If relief valve starts to drain, the first check valve is leaking.
 - ii. Close gate valve A.
 - iii. Open test cock No. 4. To fill the plastic tube, crack open gate valve A until a small amount of water continues to run over the top of the tube.

- iv. Open test cock No. 3. Water will then spill over the top of the short tube.
- v. Open test cock No. 2.
- vi. Open drain cock slowly until spillage over the top of the short tube stops. Check the gauge reading at this point. This reading is the pressure drop across the first check valve and should be between 6 and 10 p.s.i.
- vii. Slowly open the drain cock, thereby causing the gauge pressure to fall.
- viii. As the gauge pressure approaches 2 p.s.i., the water column in the short tube will slowly fall, and should fall rapidly just as the relief valve opens. (In valves 6 inches and larger, it may be necessary to refill the tube with a hose.) The gauge reading at this point shall not be less than 2 p.s.i.
- ix. Open the drain cock wide, causing the relief valve to come wide open.
- x. If the water level in the long tube remains at the top of the tube, the second check valve is tight. If the level falls when the relief valve is open, refill this tube with a hose and maintain the water level at the top of the tube. If the relief valve drains continually, the second check is leaking. If there is no drainage from the relief valve, but flow through the hose is required to maintain the water level in the tube, then gate valve B is leaking. Be sure to leave A and B wide open on fire protection systems.

Note: It is undesirable to leave the compound pressure gauge in place during normal operation of a Reduced Pressure Zone Backflow Preventer because of possible damage due to sudden fluctuations in pressure, etc.

2. For testing equipment shown in Figure 5.

- i. Connect the number 2 and 3 test cocks of the device to the hoses, as shown in Figure 5. Close gate valve number 2. Open test cocks number 2 and 3. Open vent valve "C". Open valve "A" and bleed to atmosphere until all air is expelled. Close valve "A". Open valve "B" and bleed to atmosphere until all air is expelled. Close valve "A". Open valve "B". Close valve "C". Connect number 4 test cock of the device to the vent hose as shown in Figure 5.
- ii. To test check valve No. 1 for tightness against reverse flow. With gate valve No. 1 open, gate valve No. 2 closed, test cock No. 2 and 3 open, test cock 4 closed, and test valves "A", "B", and "C" closed; observe the pressure differential gauge. If there is a decrease in the indicated valve, check valve No. 1 is "leaking".
- iii. To test check valve No. 2 for tightness against reverse flow. With gate valve No. 1 open, gate valve No. 2 closed, test valves "A" and "C" open, test valve

"B" closed and test cocks No's. 2, 3 and 4 open, indicated pressure differential will decrease slightly. If pressure differential continues to decrease, check valve No. 2 is "leaking".

iv. To test operation of pressure differential relief valve. With gate valve No. 1 open, gate valve No. 2 closed, test cocks No's. 2, 3 and 4 open, test valve "A" open, and test valve "C" closed; open test valve "B" very slowly until the differential gauge needle starts to drop. Continue to open valve "B" slowly until the moment the first discharge is noted from the relief valve. Record this as the opening differential pressure of the relief valve. This pressure should be 2 p.s.i. or greater when the pressure differential relief valve initially starts to drip.

Notes:

1. If tests under N.J.A.C. 7:10-10.6(e)2ii and iii give indication by discharge water that the check valve is leaking, investigate the condition of the relief valve and seat before repairing check valve.
2. When test is completed close test cocks No. 2, No. 3, and No. 4, open gate valve No. 2 and drain test equipment before storing equipment.
3. Testing procedures may vary slightly depending on kit used: if so, use procedure outlined in the kit.

7:10-10.7 Facility changes or cancellations

(a) The Bureau of Potable Water shall be notified within 14 days, by mail, in the event of any of the following changes:

1. Mailing address;
2. Owner or premises (new mailing address shall be included);
3. Change in any manufacturing process;
4. Change in tenant.

(b) The Bureau of Potable Water shall be notified, by mail, prior to making any changes in the type, size or number of assemblies (devices). A formal application for this change may be required at the discretion of the Department.

(c) When a physical connection installation is removed the owner of the installation shall notify the water purveyor and the local health department within seven days following such removal, and the following procedure shall be adhered to:

1. Removal of one of several approved installations:
 - i. The water purveyor and/or the local health department shall certify in writing to the owner of the premises that the connection(s) has been removed and the provisions of N.J.A.C. 7:10-10.2(d) of these regula-

tions are not violated. This shall be accomplished by a visual inspection.

ii. The above certification(s) and a cover letter from the owner of the premises explaining which device(s) has been removed, shall be forwarded to the Bureau of Potable Water within seven days of his receipt of the said certifications.

2. Removal of all approved installations:

i. The water purveyor and/or the local health department shall certify in writing to the owner of the premises that the unapproved water supply has been abandoned and that the approved installation is no longer needed. This shall be verified by a visual inspection.

ii. In addition to the above certification(s), the owner of the premises shall submit to the Bureau a cover letter explaining what has been done and what are his intentions with regard to the unapproved source(s). The cover letter and certification(s) shall be mailed within seven days of his receipt of the said certifications.

3. The Department reserves the right to reinspect any facility with regard to this section.

i. The source of supply is adequately protected by natural means; or

ii. That extended operation of a comparable treatment installation or pilot plant has provided adequate protection and acceptable operating characteristics for a period sufficiently long to cover all the variations in conditions that may be reasonably expected.

(c) The term "adequate protection", as used in these rules, shall mean that the water reaching consumers complies continuously with the physical, chemical, and bacteriological requirements of the New Jersey Primary Drinking Water Standards, Maximum Contaminant Levels set forth in subchapter 5 of this chapter, and the term "adequately protected" shall be construed accordingly.

(d) In the case of extensive or involved projects, or those for which deviations from these Rules and Regulations are anticipated, the preparation of a preliminary report and plan is advisable before detailed design proceeds. It is recommended that the preliminary data be discussed with the Bureau of Potable Water before final decisions are made.

(e) For the purposes of these rules and regulations and to form a basis in determining the degree of treatment required, the following classifications shall apply to natural waters intended as sources of supply for potable and domestic purposes:

1. Class 1: Ground waters which may be adequately protected by disinfection only, and which meet the requirements of the N.J. Drinking Water Standards (Primary and Secondary) in all respects except as to bacterial content which shall not exceed an average coliform M.P.N. concentration of fifty (50) per 100 ml in any month.

2. Class 2: Ground waters which may be adequately protected by disinfection, and in addition, by one or more of the following: filtration, straining, aeration, iron removal, manganese removal, phosphate compound treatment, pH adjustment, or softening; and in which the average coliform M.P.N. concentration does not exceed fifty (50) per 100 ml in any month.

3. Class 3: Ground or surface waters which require pretreatment, filtration, disinfection, and any other processes defined in Class 2 to effect adequate protection; and in which the average coliform M.P.N. concentration is more than fifty (50) per 100 ml, but less than five thousand (5,000) per 100 ml in any month.

4. Class 4: Ground or surface waters which require prechlorination, pretreatment, filtration, postchlorination facilities, and any other processes defined in Class 2 to effect adequate protection; and in which the average coliform M.P.N. concentration exceeds five thousand (5,000) per 100 ml in any month.

SUBCHAPTER 11. STANDARDS FOR CONSTRUCTION OF PUBLIC COMMUNITY WATER SYSTEMS

7:10-11.1 Introduction

(a) These rules, promulgated pursuant to the authority of Section 4c(5) of the N.J.S.D.W.A. (N.J.S.A. 58:12A-4c(5)), constitute the rules by which the Department shall conduct the review and approval, with appropriate conditions, of plans and specifications for the design and construction of new or substantially modified public community water systems. No such system or part thereof shall be constructed or substantially modified without prior Department approval pursuant to these regulations.

(b) Rules concerning deviations from rules and regulations requirements are as follows:

1. When it can be established by the applicant that the proposed installation provides adequate protection, plans and specifications which deviate from the requirements of these Rules and Regulations will be examined on the basis of the conservative evaluation of data submitted by the applicant.

2. In order for such consideration to be given, the data submitted by the applicant must include analytical and survey determinations which demonstrate either of the following:

7:10-11.2 Material to be submitted

(a) Applications for approval rules are as follows.

1. Applications shall be submitted on original forms supplied by the Department. Machine copies shall not be considered acceptable.

2. Applications for the approval of plans and specifications shall be submitted by a qualified professional engineer licensed to practice in New Jersey. Plans submitted by such an engineer shall bear his seal (N.J.S.A. 45:8-45) and must be preceded or accompanied by a letter of appointment from the proper official of the city, county, district, company or other unit, certifying that the engineer has been duly authorized to prepare such plans and specifications.

3. Applications are to be signed by the proper official (with title) of the public body, company, or corporation; (or if signed by an authorized agent, shall be accompanied by a certified copy of the authorization).

4. Applications by newly constituted privately owned water utilities shall be approved by the local governing body of the municipality or municipalities concerned.

5. The review of plans by the Department is limited to sanitary engineering features of public health significance, it does not include the examination of structural, hydraulic, mechanical or electrical design, nor economic factors.

6. The approvals of the Water Allocation Section in the Division of Water Resources and Bureau of Geology in the Department of Environmental Protection and the Board of Public Utilities in the Department of Energy are required in many instances for water supply projects. Such approvals are frequently coincidental with the requirements of approval by the Bureau of Potable Water, New Jersey State Department of Environmental Protection. It is, therefore, recommended that applicants consult with representatives of these agencies on matters concerning water diversion rights, well drilling permits, approval of municipal franchises, rates, charges, etc. Such approvals by other controlling agencies however, are not required to be submitted to the Bureau of Potable Water.

(b) The following materials shall accompany the application for approvals.

1. An Engineer's Report as outlined in subsection (c) of this section (one copy).

2. Maps, plans and specifications (one complete set, unless the applicant needs or desires an approved set, in which case two complete sets shall be submitted).

3. Total estimated cost of the proposed project, including the cost of land and legal and engineering fees, and the cost of all applicable structures even though they may not be subject to review.

(c) The Engineer's Report shall, when pertinent, contain the following information.

1. Description of existing waterworks as related to the proposed project.

2. Data on present and future population served by the facility together with present and anticipated water requirements and the relationship of the proposed works to these factors. Estimates should, in general, be for a period of twenty-five (25) years unless a shorter design period can be justified.

3. Information on the source of supply, to include the following data:

i. If from a surface source; the dependable yield, characteristics of the quality of the water in relation to its treatability, information obtained as a result of a sanitary survey on the sources of pollution, and the existing or proposed measures to insure protection of the supply;

ii. If from an underground source; 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 yield and water quality, test well findings (if any), sources of potential pollution within a minimum distance of five hundred (500) feet, or in the case of adverse geological conditions such as creviced or fissured rock formations, from a larger area, and a general description of the construction features proposed to protect the source from pollution.

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

5. A summary of proposed treatment processes with data to establish that the proposed processes will produce adequate protection of the water so treated, together with sufficient information on the nature and dosage of any chemicals applied so as to provide the reviewer with a clear understanding of their operation. Normal capacity of each unit shall be given to show that the requirements of these Rules and Regulations are being met.

6. The methods proposed for the treatment and disposal of sludge and filter backwash.

7. Sanitary features of proposed storage, transmission and distribution works.

8. That portion of the system to be built at the present time.

(d) A map or maps in sufficient detail to aid in the examination and comprehension of the specific project covered by the application shall be included in, or accompany, the plans and specifications. All maps shall be drawn to a suitable scale, shall be properly titled, and the north point

and datum shall be indicated. Topography shall be shown by elevations, contours or other suitable methods. Where pertinent, roads, streams, municipal boundaries and other features shall be shown, including applicable data such as watersheds, reservoir locations, wells and well fields, water treatment plants, existing transmission and distribution mains, storage tanks, fire hydrants, and potential sources of pollution such as sewers and sewage disposal units.

(e) Rules concerning plans are as follows:

1. Details:

i. Plans shall be drawn to standard scales on uniformly-sized sheets. Each sheet shall contain necessary titles, scales, dates, owner's name and the general description of the project. The name of the engineer and his seal shall be shown on each sheet.

ii. The preferred size is a drawing having a height of twenty-two (22) inches and a length of about thirty-four (34) inches including suitable margins. Lettering should be sufficiently large to permit reduction, and all plans should have graphic scales.

iii. If there is more than one sheet, all shall be bound together and, in the case of transmission and distribution mains, an index map shall be supplied showing by number the area and districts covered by the various sheets.

2. Symbols: All topographical symbols and conventions used shall be clearly defined. Water transmission and distribution mains to be built at present or constructed later shall be shown by suitable conventions. Where applicable, existing sanitary sewers and combined sewers shall be shown by special designations.

3. Elevations and dimensions: Surface elevations shall be shown of all important parts of the work, with sufficient dimensions to permit verification of the operations of the facility. Datum shall be stated.

4. Plans for water treatment plants, etc.:

i. The plans for intake structures, pumping equipment, water treatment plants, and similar structures shall include a general plan showing the various units and structures included in the project and, subject to the provisions of subparagraph iii of this paragraph, detail plans of such units and structures.

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

iii. Only the detailed plans relevant to the examination by the Department need be submitted. Detailed drawings which have no sanitary significance but which are given by the engineer for the guidance of builders or contractors need not be submitted, e.g., structural details, reinforcement details, details of heating, ventilation, electrical work, architectural details, and the electrical-mechanical details of pumps, engine and machinery.

(f) Complete specifications shall be submitted covering the sanitary facilities of the project. In order to facilitate review of the data sections dealing with general conditions of Contract, Notice to Bidders, Detailed Specifications for such items as doors, windows, fittings and fixtures, steel work, concrete, and wood work, should be omitted.

(g) Rules concerning operation during construction are as follows:

1. When a modification or an addition to an existing water treatment plant is proposed, the engineer shall submit a program for keeping existing units in operation during construction.

2. If a shutdown of any existing treatment units will be necessary during construction, the engineer shall submit for approval a schedule which will ensure that the delivered water will be adequately protected during the shutdown period.

(h) All public community water systems shall pay the fee assessed pursuant to N.J.A.C. 7:10-15.

Amended by R.1989 d.28, effective January 3, 1989.

See: 20 N.J.R. 142(a), 21 N.J.R. 43(a).

Added (h).

7:10-11.3 General requirements

(a) The various combined components of a public community water system comprising source, treatment, storage and distribution facilities shall be designed to meet peak-hour water demands.

(b) Rules concerning instrumentation are as follows.

1. Each water source installation shall include a totalizing flow meter. Except for small installations, indicating, totalizing, and recording equipment is required.

2. Installations shall be provided with adequate instrumentation to ensure the proper operation of the process.

3. There shall be means available to determine water level elevations in each distribution storage unit.

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

(c) Every water treatment plant shall be equipped at a minimum with analytical capabilities for the determination of chlorine residual concentrations by the D.P.D. Method and, if treating surface water, with capability for the measurement of turbidity by the Nephelometric Method. In addition, it shall possess capability for conducting quality control tests commensurate with the type of water treatment installed. Such laboratory facilities, if available at the water treatment plant and used solely for day-to-day quality control purposes, need not be certified, but the analytical methods and procedures shall be acceptable to the Department.

(d) Rules concerning disinfection of waterworks facilities are as follows.

1. After completion of any public water supply or water treatment facility (including transmission and distribution mains and distribution system reservoirs and tanks), all surfaces with which adequately protected water may come into contact shall be effectively disinfected before being placed into service.

2. Acceptable methods of disinfection will include, but shall not necessarily be confined to, the following:

i. Contact with a chlorine solution of concentration not less than fifty parts per million (50 ppm), for a minimum contact period of twelve (12) hours.

ii. Contact with a chlorine solution of concentration not less than twenty parts per million (20 ppm), for a minimum contact period of twenty-four (24) hours.

iii. Thorough wetting of the surfaces to be disinfected, by means of brush or spray application, of a chlorine solution of concentration not less than five hundred parts per million (500 ppm), with a minimum contact period of one (1) hour.

3. Proposed method or methods for the disinfection of waterworks facilities shall be included in the specifications.

(e) Rules concerning avoidance of cross connections, etc., are as follows.

1. No cross connection shall be permitted to exist in any water treatment plant between any pipe or conduit carrying adequately protected water and another pipe or conduit carrying wastewater, raw water, or water in any prior stage of treatment.

2. No conduit or chamber containing adequately protected water shall be permitted to 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 backflow can occur under any condition.

4. Priming systems for pumps shall be such as to prevent the contamination of adequately protected water.

(f) Rules concerning wastewater treatment and disposal are as follows.

1. Wastewater, such as sludge from coagulation and sedimentation tanks and filter backwash water, shall ordinarily be treated before being discharged into any of the

waters of this State. The degree of treatment will be contingent upon the character of the wastewater and its effect upon the receiving waters. Such wastewater discharge shall not be permitted except in accordance with the requirements of a New Jersey Pollution Discharge Elimination System (NJPDES) permit issued by the Monitoring, Surveillance and Enforcement Element of the Division of Water Resources of the Department or the National Pollutant Discharge Elimination System (NPDES) issued by the United States Environmental Protection Agency as applicable.

2. Unless otherwise approved, minimum treatment shall be by plain sedimentation in lagoons. A minimum of two (2) lagoons shall be provided with a minimum total combined capacity equivalent to twenty-four (24) hours wastewater flow. They shall be controlled as to discharge rate and point of discharge, so as to meet the requirements of the Department for the specific situation.

4. When discharge to a sanitary sewer is proposed, a written statement from the sewerage authority shall be submitted which indicates that the authority is agreeable to the proposal and that the discharge will not adversely affect the sewer system and/or sewage treatment.

5. Disposal of sanitary sewage shall be in accordance with the applicable statutes and regulations.

(g) A suitable operating building shall be provided for each water treatment plant. The building shall be provided with heat, lighting, and ventilation. Office space, a workshop, a laboratory, and storage should be provided.

(h) Drinking water, toilet, and lavatory facilities are recommended for each treatment plant, and each pumping station; and are required at each treatment plant for waters of Classes 3 and 4. In all cases, a shower is recommended, but is mandatory where hazardous chemicals are handled. See N.J.A.C. 7:10-11.9(f).

(i) Depending on the size of the plant and the character of the equipment, a complete outfit of necessary tools and accessories shall be provided.

(j) All waterworks facilities shall be equipped with necessary safety features, including access ladders, railings at the tanks and walkways, guards around belts and other moving parts, handrails at stairs or steps, adequate ventilation of enclosures, and such special provisions as are required by these Rules and Regulations for handling of chemicals. Nonslip treads on stairs shall be provided, and slope of stair shall meet New Jersey Department of Labor requirements. Warning Signs shall be posted in hazardous locations. A First Aid kit shall be provided. Where required for safety or security, a suitable enclosure shall be provided.

(k) All electrical work shall conform to the Electrical Subcode of the State Uniform Construction Code Act

(N.J.A.C. 5:23-3.6) with particular attention to hazardous location requirements.

7:10-11.4 Groundwater supplies

(a) Rules concerning duplicate installations required are as follows.

1. In supplies derived entirely from a groundwater source, duplicate wells and pumping equipment, or equivalent, shall be provided when average water demands exceed twenty thousand (20,000) gallons per day or the number of services exceeds one hundred (100).

2. An interconnection with another approved public community water system may be accepted in lieu of a duplicate installation if a contract or other written binding agreement to obtain sufficient water is executed and if it can be shown to the satisfaction of the Department that such an interconnection can supply needed demand.

(b) Protection of ground water sources rules are as follows.

1. Sufficient land shall be acquired around wells, infiltration galleries, springs, and similar sources of ground water developed for public community water supply, as to satisfy the Department.

2. All land within a minimum of fifty (50) feet from a well shall be acquired or controlled by the owner of a public community water supply system, and no potential source of contamination shall be permitted to exist within that area.

3. Any sewer or line carrying sanitary or industrial wastes which is within one hundred (100) feet of a well shall be of steel, reinforced concrete, cast iron or other suitable material, shall be properly protected, of completely watertight construction, and shall be tested for watertightness after installation.

4. No manholes or connections on a sanitary sewer system shall be permitted within one hundred (100) feet of a well.

(c) The Engineer's Report required in accordance with the provisions of N.J.A.C. 7:10-11.2(c) shall include the following information:

1. General description of the construction of the ground source;

2. Test pumping report including maximum test yield and drawdown;

3. Capacity of pumping equipment installed and the control of its operation.

(d) The map or maps required in accordance with the provisions of N.J.A.C. 7:10-11.2(d) shall show the following information.

1. Topography and the locations of existing, presently planned, and future planned ground water sources in the area under consideration. Each source shall be given an identifying number in chronological order of construction.

2. Elevations of well heads above a common datum plan and highest known flood elevations.

3. Pollutational hazards (such as septic tank systems, toxic and industrial waste disposal sites, landfills, chemical and salt storage areas, sewers, cemeteries, barnyards and watercourses), as are required in N.J.A.C. 7:10-11.2(c)3.

(e) The detailed plans and specifications shall be accompanied by a formation log showing the types and thicknesses of formations penetrated by the well or, in the event this information is not available at the time of the application, it shall be submitted to the Department when the well has been constructed and prior to the approval of the well as a source of water for public potable and domestic purposes.

(f) Detailed drawings rules are as follows.

1. A schematic drawing or drawings of the construction shall be included with as much detail as is practicable with the information available, and shall include:

i. Length, size and locations of casings and screens;

ii. Method of sealing off shallow groundwater from entering the well, including the sealing of the annular space between the drill hole and the outer casing and surface strata;

iii. Pumping unit, including prime and standby power sources;

iv. Plan and section of pump house or similar structure;

v. Method of connecting the well or other groundwater source with the distribution system.

2. A detailed drawing or drawings shall be submitted for the following construction:

i. Details of well head, including elevations of protective curbing, top of casing, pump house floor and surrounding grade;

ii. Method of sealing well head against surface pollutants;

iii. Provision and locations of well vents and the methods for their protection against the entry of contaminating matter;

iv. Well head piping details, showing provision and locations of check valves, surge or air relief valves, gate valves, sampling tap, water level indicator, discharge pressure gage, and blowoff connection to permit pumping to waste.

(g) Subject to the provisions of this section minimum well construction standards shall equal applicable portions of the American Water Works Association Standard for Deep Wells (AWWA A100-66) or superseding standard.

(h) General requirements of wells are as follows.

1. Unless permitted by the Department under exceptional circumstances, every well intended as a source of water for a public community water system shall be provided with a minimum casing length of 50 feet, and an annular space outside the casing at least two inches wide extending a minimum vertical distance of 50 feet and filled with grout in accordance with the requirements of subsection (k) of this section.

2. The actual on-site work of drilling, constructing, altering or repairing a well shall be under the supervision of a person in possession of a valid license issued by the New Jersey Well Drillers Examining and Advisory Board.

3. During construction, the area surrounding the well shall be maintained in a clean condition, and surface water shall be diverted away from the well.

4. Water used for the drilling or driving of a well shall be obtained only from a source of known potable quality, or shall have been disinfected.

5. The well shall be constructed so as to prevent surface and shallow groundwaters from gaining access into the well or the aquifer. Water bearing formations that are known to be contaminated or those identified by the Department as being in danger of contamination shall be sealed off with grout. Sealing shall be accomplished by a method approved by the Department.

6. Where the danger of salt water intrusion exists, the well shall be constructed with an outer casing in accordance with the requirements of the Water Policy and Supply Council of the State of New Jersey.

7. The casings of wells drilled or driven into rock shall extend through the overburden, and shall be effectively sealed into the rock formation. If the rock is fractured, creviced or fissured, or is limestoned or shale, the casing shall extend to a sufficient depth into the rock to satisfy the Department that the aquifer is adequately protected.

8. The string of pipe used as the protective casing in a well shall be continuous, with tight fitting joints from its bottom terminal to the top of well to assure adequate protection.

9. Gravel-pack wells shall be constructed with clean insoluble stone properly graded for the formation size and the screen opening. The specifications shall include a provision for the disinfection of the gravel before its placement.

10. Prior to final completion of the well, the casing shall be capped and any open annular space covered until the well is grouted. The cap shall either be threaded or

welded onto the casing, or be a friction type device which effectively seals the well casing.

11. After construction of the well, it shall be properly developed so as to obtain the best practical yield and quality of water. The water produced shall be free of sand and salt.

12. Adequate provision shall be made for the safe discharge of water derived when a well is pumped to waste.

(i) Well casings rules are as follows.

1. Metal casings which are to be a permanent part of the well shall be of wrought iron or steel having minimum weights and thicknesses as specified in the American Water Works Association Standard Specification A100-66, or superseding standard.

i. The joints of permanent metal casings shall be welded or composed of threaded couplings.

2. Other casing materials, if proposed, shall be of such weight and thickness as is required to withstand the stress of installation and any corrosive effect of the water and soil, and shall have acceptable, watertight joints.

(j) Well screens rules are as follows.

1. A well screen shall be provided where necessary to insure delivery of water which shall be visibly free from sand and/or silt.

2. The screen, when provided, shall be provided with such fittings as are necessary to seal it to the casing and to close the bottom of the screen. It shall be of adequate strength and of material which will adequately resist corrosion, and of such design and size as to assure long life.

3. Well screen openings shall provide the maximum amount of open area, consistent with the strength of screen material and sediment grain size of the water bearing formation or any sand or gravel pack placed adjacent to the screen. The screen shall permit maximum water transmission without clogging.

4. The screen shall be set at an elevation to assure that the lowest pumping level in the well will be above the top of the screen.

(k) Grouting of annular space rules are as follows.

1. During the grouting operation, the permanent well casing shall be maintained in a centered position within the drill hole.

2. A temporary outer casing, if used, shall be withdrawn during the grouting operation.

3. Except with the approval of the Department, only the following materials shall be acceptable for grouting

the annular space between the drill hole and the permanent well casing:

i. Neat Portland cement or quick-setting cement utilizing no more than $7\frac{1}{2}$ gallons of water per 94 pound sack of cement.

ii. Neat Portland cement or quick-setting cement dry blended with no more than $7\frac{1}{2}$ pounds of sodium-base bentonite clay per 94 pound sack of cement and no more than 10 gallons of water.

iii. Neat Portland cement or quick-setting cement mixed with clear sand in 1:1 ratio and no more than $7\frac{1}{2}$ gallons of water per 94 pound sack of cement.

4. When the grout is placed by the pressure method, it shall be placed in one continuous operation in an upward direction from the bottom to the top of the annular space.

(l) Protection of well head rules are as follows.

1. The well head shall be so constructed as to assure the maximum protection of the well, and to exclude entry into the well of any contaminating matter.

2. The casing pipe and protective curbing of all wells shall extend at least twelve (12) inches above the pump house floor or the grade near the well.

3. Pump house floor shall be sloped away from the well head and, unless otherwise permitted, the floor shall be above the maximum known flood elevation.

4. Well pits will be accepted only if adequate provision is made for their drainage by a sump pump or other arrangement. Direct connection to a sewer or storm drain will not be acceptable.

5. The space between the pump column and the inner casing of each well shall be provided with a vent which shall be protected with a downfacing elbow or mushroom type head located above the flood level. All vents shall be screened against the entry of insects.

6. Wells in which pumping equipment is not installed shall be properly capped to exclude the entry of contaminating matter pending such installation.

(m) Special requirements for other groundwater sources are as follows.

1. Where approval is requested for other works for the derivation of water from ground sources, such as dug or bored wells, radial collectors, infiltration galleries or springs, the provisions of subsections (a) through (l) of this section shall apply insofar as they are applicable.

2. Such applications shall include sufficient detail as to the method of construction to permit the Department to fully evaluate the sanitary significance of the proposed works.

(n) Test, samples and records rules are as follows.

1. Provisions shall be made to test the ability of each well to yield water. The test shall provide for continuous pumping for at least 24 hours or until stabilized drawdown has been attained for at least 6 hours when test pumped at least 20 per cent above the designed pumping rate. Records of flow rate and drawdown shall be made at one hour intervals, (or less if required) during the test, and the water levels during the test, and the water levels during the recovery period shall be recorded.

2. Water samples shall be taken during the test period and examined for bacteriological and chemical quality in accordance with the parameters included in the New Jersey primary and secondary drinking water regulations. N.J.A.C. 7:10-5.1 et seq. and 7:10-7.1, et seq.

3. Records of the test pumping data shall be submitted to the Department.

(o) Unsuitable or nonproductive wells and abandoned wells shall be sealed in accordance with the requirements of the "Standard Specifications for the Sealing of Abandoned Wells" promulgated by the Bureau of Water Supply Planning and Management of the Department as N.J.A.C. 7:20-3.1 et seq. Test wells and observation wells shall be properly sealed in accordance with the provisions of the Division of Water Resources of the Department.

(p) Pumping equipment rules are as follows.

1. Details of the pumping equipment to be installed, including rated capacity, type of drive, and a general description of the pumping unit, shall be submitted.

2. Total pumping capacity installed should be sufficient to provide at least the maximum anticipated water demand with the largest single unit out of service.

3. The pump and equipment for each well shall be designed and installed to ensure a pollution proof and, where necessary, a frost proof installation. The pump base shall be constructed so as to permit installation of a watertight mounting.

4. When possible the pump shall be so located and designed to make the use of a pump pit unnecessary. The location shall be such as to permit convenient access for the removal and repair of the pump.

5. Maximum pump capacity shall be such that the pumping level will not fall below the top of the screen.

6. The pump setting and suction inlet should be so located that the pumping level cannot be drawn below the top of the screen.

7. The setting of the pump should be such that the pumping level will not be drawn below the level of the lowest pump bowl.

(q) Auxiliary equipment for well supplies rules are as follows.

1. The discharge pipe from each well shall be provided with a check valve and a shut-off valve. The check valve shall be located between the pump and any blowoff, bypass, or other connection to the discharge pipe.

2. Well blowoff shall terminate above ground level, and shall be suitably protected against the entry of pollution.

3. Each well shall be equipped with a water level indicator, a discharge pressure gauge, flow meter, and protected access to the well to permit the direct measurement of the water level. For large installations the Department may require the installation of an indicating, totalizing and recording meter.

(r) After completion of the groundwater source of supply and the installation of the permanent pumping equipment, the well or other groundwater source, suction piping, pumping equipment and discharge piping shall be disinfected in accordance with the provisions of N.J.A.C. 7:10-11.3(d) before being placed into service.

(s) Approval of water quality rules are as follows.

1. Following disinfection of the groundwater source as required by subsection (r) of this section the water shall be pumped to waste until the water is free of residual chlorine.

2. The water shall then be tested by the Department for quality, and the water source will not be approved for distribution for public potable and domestic purposes until satisfactory bacteriological and chemical tests are obtained or suitable treatment is proposed.

3. Wells shall stand idle for at least twenty-four (24) hours immediately preceding the test, and they shall contain no disinfectant.

4. Notwithstanding the provisions of this subsection, the chemical testing may be waived if it can be demonstrated that the water is of similar chemical quality to that from other groundwater sources in the immediately adjacent area and that it will be subjected to adequate treatment prior to its distribution for public potable and domestic purposes.

7:10-11.5 Surface water supplies

(a) The following requirements regarding construction of facilities concerned with surface water supply sources are set forth to ensure adequate protection of the water supply. Basic information on the source must be contained in the Engineer's Report as outlined in N.J.A.C. 7:10-11.2(c).

(b) Location and protection of intake rules are as follows.

1. Intakes shall be so located and designed as to secure adequate quantities of water of good quality.

2. Intakes shall be so located and arranged that surface drainage from the immediate vicinity of the intake has a minimum adverse effect on water quality.

(c) Intake structures shall ordinarily permit selective withdrawal of water from multiple levels.

(d) Each intake shall be protected by removable or cleanable coarse screens or racks to prevent debris from entering the system.

(e) Fine screens may be used for the purpose of excluding smaller fish and debris from the system.

7:10-11.6 Pumping stations

(a) The following minimum requirements are stated in order to ensure that each pumping station constructed can deliver water to its point of discharge in such a manner as to maintain adequate protection.

(b) Location and protection rules are as follows.

1. The station site shall afford maximum protection against flooding or other damage.

2. The station shall be protected against unauthorized entry and vandalism. It shall preferably be enclosed within an industrial-type woven mesh fence with lockable gate.

(c) Construction of buildings rules are as follows.

1. Buildings shall be constructed of durable and fire-resistant materials.

2. Buildings shall be so constructed that surface water will not enter or lie against the building. Normally, the ground floor shall be at least six (6) inches above the surrounding ground.

3. All floors, dry wells, meter pits, piping galleries, and similar locations not intended to contain water, shall be self-draining without possibility of backflow. If necessary, sufficient sump pumping capacity shall be provided for the removal of water.

4. Adequate heating, lighting and ventilation shall be provided.

(d) Wet wells shall be watertight and be protected against entry of seepage or other foreign material. They shall be covered, and be provided with a vent or vents which shall be screened and protected.

(e) Pumping equipment rules are as follows.

1. Pumping equipment shall be designed to meet the necessary delivery conditions.

2. The number and capacity of the pumping units shall be sufficient to provide the maximum output of the station when the largest single unit is out of service.

3. Each booster pumping station shall be designed and controlled to maintain a pressure of at least twenty pounds per square inch (20 psi) in the water main from which it draws suction if, in the opinion of the Department, a lower pressure would adversely affect customers being served by the main. When deemed necessary by the Department to maintain adequate pressure for users served by the main from which suction is drawn, an automatic switch shall be installed that will deactivate the pumps.

4. Priming systems shall be such as to prevent contamination of potable water supplies.

(f) Pumping stations shall be adequately equipped with such valves, gauges, meters, and other accessories as are needed for the proper operation of the station.

(g) Power rules are as follows.

1. A dependable source of power shall be provided for the operation of the pumping equipment.

2. When commercial electrical power is used, two independent sources of power should be available, comprising either:

i. Two independent electrical sources; or

ii. One electrical source, and one standby source either for emergency power generation or direct drive to the pumping equipment.

3. When nonelectrical power source is used, dependability of the source must be demonstrated.

4. Auxiliary power equipment, when provided or required, shall be so designed and of sufficient capacity as to adequately operate both pumping and essential water treatment processes in the event of failure of the commercial electrical power source.

(h) All automatic and remotely-controlled pumping stations shall be provided with telemetering equipment or other adequate automatic signalling devices which will indicate when the station is out of service.

(i) There shall be no cross connection anywhere in the station between a potable water supply and any supply which is not of potable quality.

7:10-11.7 Distribution systems

(a) Material to be submitted includes the following.

1. For new water supply systems, a plan showing the distribution system shall be submitted with the other engineering data. This shall show locations, diameters and material of the pipes, and location of hydrants, blowoffs, and main valves.

2. Major extensions, additions, and improvements of transmission and distribution lines in excess of an estimated construction cost of \$150,000 shall be submitted for review and approval. Routine extensions, additions, and alterations need not be submitted.

(b) Approval of proposed major extensions to the distribution system shall not be granted where, by reason of inadequate prime source, transmission or storage capacities, the public community water system cannot, in the opinion of the Department, adequately provide for the additional water demand that can be expected.

(c) Capacity and size of main rules are as follows.

1. Design capacity of water mains shall be such as to maintain a minimum pressure of twenty pounds per square inch, (20 psi) at ground level at all points in the distribution system under all required flow conditions.

2. Except as follows, the minimum diameter of all distribution mains shall be six (6) inches. Any deviation from this minimum requirement shall be justified by hydraulic analysis with consideration for future water usage, and may be approved at the discretion of the Department except that a water distribution main of less than six inches diameter will not be approved if its intended to supply a fire hydrant(s) or if there is reasonable possibility that it will be extended to serve additional properties or areas.

(d) General design requirements 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 provided with adequately protected hydrants to permit flushing. Each dead end shall be provided with an adequately protected fire hydrant, or flushing hydrant, or a valved outlet to which a temporary pipe may be affixed to discharge flushed water above the ground.

2. All distribution mains shall be provided with sufficient earth or other suitable cover to prevent freezing.

3. Water services and plumbing shall conform to the requirements of the Plumbing Subcode promulgated by the New Jersey Department of Community Affairs pursuant to the provisions of the State Uniform Construction Code Act (N.J.A.C. 5:23-3.5).

4. The specifications shall include provision for the adequate disinfection of all new distribution mains prior to being placed into service.

5. Water mains and sewers generally shall be separated by a horizontal distance of ten feet (ten feet). If such lateral separation is not possible, the water and sewer pipes shall be in separate trenches, with the sewer at least eighteen (18) inches below the bottom of the water main; or with such other separation as is approved by the Department. At crossings of sewers and water mains, the sewer shall, in general, be at least eighteen (18) inches below the bottom of the water main. Where this is not possible, the sewer shall be constructed of cast iron pipe with mechanical or slip-on joints, or hot-poured lead joints, for a distance of at least ten feet (10 feet) on either side of the crossing; or other suitable protection, as approved by the Department, shall be provided.

6. Sufficient valves shall be provided on water distribution mains so that inconvenience to consumers, and safety hazards, will be minimized during repairs.

(e) Surface water crossing, both over and under water, present special problems which should be discussed with the Department to determine if any special provisions will be required before final plans are prepared.

(f) Maintenance of adequate protection rules are as follows.

1. Chambers or pits containing gate valves, air-relief valves, blowoffs, meters, or similar appurtenances to a distribution system shall be suitably drained and shall not be connected directly to any storm sewer or sanitary sewer.

2. No blowoff, air-relief valve, flushing device, or hydrant drain shall be directly connected to a storm sewer or sanitary sewer.

3. The open end of an air-relief pipe shall be extended from the manhole or enclosing chamber to a point at least one foot above the ground, and shall be provided with a downfacing elbow and insect screen.

4. Except as provided in subchapter 10 of this chapter, there shall be no physical connection between the distribution system and any unapproved source of water. Except with the approval of the Bureau of Potable Water, stream condensate, or cooling water from engine jackets or other heat-exchange devices, shall not be returned to the potable water supply.

7:10-11.8 Distribution storage

(a) General provisions are as follows.

1. Storage for finished water shall be provided as an integral part of each water supply system whether the system is provided with its own prime source(s) of water or buys totally from another public community water system.

2. The location, size, type and elevation of the equalization reservoir, standpipe or elevated tank shall be such as to meet the distribution system pressure requirements contained in N.J.A.C. 7:10-11.7(c).

3. The effective storage capacity serving the system by gravity shall be equivalent to approximately one day's water requirements based on the average annual demand. At the discretion of the Department a smaller capacity may be accepted by the provision of standby power, interconnections or alternate sources of supply, provided that adequate justifying data are submitted.

4. In any system serving more than fifty (50) customers, hydropneumatic tanks will not be considered as providing adequate storage.

5. Clear wells, whether designed as separate structures or as part of the filter structure, shall meet the requirements for below-grade reservoirs stated in subsection (e) of this section.

6. Finished water shall not be stored adjacent to an untreated water compartment when only a single wall separates the two.

7. Each reservoir and tank shall be equipped with overflow and low level warnings or alarms.

8. There shall be means available to determine water level elevations in each distribution storage unit. (See N.J.A.C. 7:10-11.3(b)3.)

9. Facilities shall be so designed as to permit dewatering for cleaning and maintenance without interrupting service. Direct connection to a storm sewer or sanitary sewer will not be permitted.

(b) Protection and safety rules are as follows.

1. All equalization reservoirs, standpipes and elevated tanks shall be protected against unauthorized access and vandalism. Fencing, locks, and other necessary safeguards shall be provided.

2. Due regard, in the design of an elevated facility, must be given to the personal safety of employees. (See N.J.A.C. 7:10-11.3(i).)

(c) Roofs and covers rules are as follows.

1. Each reservoir, standpipe, or elevated tank shall be provided with a suitable roof or cover.

2. The roof of the structure shall be well-drained, but drainspout pipes shall not enter the reservoir. Parapets or similar construction which would tend to hold water or snow on the roof, will not be permitted.

3. Access manholes or scuttles in the roof of an elevated tank or ground-level reservoir shall be framed at least six (6) inches above the surface of the roof; below ground-level reservoirs manholes shall be elevated at least thirty-six (36) inches above the ground. Each access manhole or scuttle shall be provided with a solid tight cover which is securely fastened against unauthorized entry.

4. All vents shall be protected with downfacing elbows or mushroom covers, and insect screens. Vents on ground-level reservoirs shall terminate not less than twenty-four (24) inches above the roof.

(d) Inside paint, etc. rules are as follows.

1. All protective coatings in contact with the water shall be inert, nontoxic, and shall not impart any taste, odor or color to the water.

2. Painting specifications for the inside paint shall be submitted with the appropriate engineering data; except

that, if identical with the appropriate AWWA Standard Specification, an indication of this effect will be sufficient without necessity of submitting details.

(e) Below-grade reservoirs rules are as follows.

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

2. Any sanitary sewer within one hundred (100) feet of a below-grade reservoir shall be of steel, reinforced concrete, cast iron or other suitable material, shall be properly protected, of completely watertight construction, and shall be tested for watertightness after installation.

3. No manholes or lateral connections to a sanitary sewer shall be permitted within one hundred (100) feet of a below-grade reservoir.

(f) Above-grade reservoirs, standpipes and elevated tanks rules are as follows.

1. Above-grade reservoirs, standpipes and elevated tanks shall be provided with such inside or outside ladders as may be necessary to permit ready inspection.

2. Riser pipes shall be protected to prevent freezing.

3. Each overflow of an above-grade reservoir, elevated tank or standpipe shall consist of a downpipe, which terminates no less than six (6) inches, nor more than thirty-six (36) inches above the ground, and so located as to prevent erosion of the foundation. A stub overflow will not be considered suitable.

(g) All reservoirs, tanks, and appurtenances shall be disinfected in accordance with the provisions of N.J.A.C. 7:10-11.3(d) before being placed into service and after having been entered for cleaning, repair, or painting.

7:10-11.9 Chemical handling and feeding

(a) Number capacity of feeders rules are as follows.

1. For essential (noninterruptible) chemicals, a minimum of two chemical feeders will be required, each of sufficient capacity to supply all of the chemical needed.

2. If more than two chemical feeders are to be used, sufficient combined feed capacity shall be available with the largest feeder out of operation.

(b) General requirements are as follows.

1. Variation in the accuracy of the feed rate shall not exceed five percent (5%) of the intended dosage.

2. Suitable means shall be provided to insure proper chemical dosage of the water being treated.

3. Methods for accurately measuring the amount of chemical fed shall be provided.

4. Discharges of solution feeders shall be designed and installed to prevent siphonage of the solution.

(c) Chemical solution tanks shall comply with the following requirements:

1. When applicable, the tank shall be provided with adequate agitation to keep the strength of the solution uniform throughout.

2. The pipes supplying water for the dissolving of chemicals, or for make-up water, shall be protected against backsiphonage.

3. The capacity of each day tank shall be sufficient to provide at least three hours chemical solution storage at normal feed rates, and shall preferably provide for eight hours of such operation.

(d) Dry feeders may be of the volumetric or gravimetric type, and shall comply with the following requirements.

1. They shall be completely enclosed, and adequate means for the control of dust shall be provided.

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

3. Make-up water shall be introduced through an air break or other approved method for preventing backsiphonage.

4. There shall be no direct connection between a solution pot drain and a sanitary sewer.

5. Waste liquids or sludge from solution pots shall be disposed of by such means as may be approved by the Department.

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

(f) Safety provisions are as follows.

1. Specifications for equipment for the storage, handling and feeding of chemicals which are hazardous to the health of employees shall include the provision of sufficient rubber or neoprene gloves and, where dry powdered chemicals are handled, U.S. Bureau of Mines approved respirators. Facilities shall be provided for washing hands and gloves.

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

7:10-11.10 Miscellaneous treatment processes

(a) Aeration rules are as follows.

1. Facilities for aeration of water, either before or after the addition of chemicals, will be examined for effectiveness in treatment and adequate protection of the water.

2. Because of the large variation in aeration requirements, no standards are herein prescribed for the air volumes to be provided.

3. Where water is subject to an aeration process, and is not subsequently subjected to filtration, the following minimum requirements shall be fulfilled to provide adequate protection against dust, insects, and bacteriological contamination.

i. All air entering the aeration unit shall be passed through a corrosion resistant screen of not less than 24 mesh.

ii. If of spray or trickle type, the aeration device shall be placed in a louvered enclosure equipped with watertight and dust-tight roof, and the aerated water shall be subsequently disinfected.

4. Notwithstanding the requirements of the subsection, no special protection against aerial contamination is required where the aerated water is subsequently subjected to coagulation and filtration.

(b) Softening rules are as follows.

1. A public community water supply shall not be softened to zero hardness. Where water is softened, it shall be blended with unsoftened water to ensure that the delivered water contains a minimum hardness of 50 mg/l as calcium carbonate (CaCO_3) prior to distribution.

2. Design of facilities for the softening of water shall conform to pertinent requirements of other sections of these rules and regulations.

3. Lime softening:

i. Except where carbon dioxide gas is used for recarbonation, a minimum detention period of 20 (twenty) minutes shall be provided.

ii. The design shall include the provision of rapid filter units.

iii. The design shall include provision for disinfection.

iv. Excess lime treatment will not be accepted as a substitute for chlorination or other approved disinfection process as required by N.J.A.C. 7:10-11.13.

4. Ion-exchange softening:

i. Except where adequate pretreatment is provided, ion-exchange processes shall not be used as a substitute for filtration.

ii. The design shall be such that bed regeneration is not required more frequently than once per 6 hours of service.

iii. The design criteria for ion-exchange units used also as filters shall meet the applicable design requirements stated in section 13 of this subchapter.

iv. Banks of household-type units in parallel will not be considered as acceptable for public water treatment plants.

(c) Iron and manganese removal rules are as follows.

1. A public water supply, prior to distribution, shall be subjected to an appropriate removal process if the raw water contains concentrations exceeding 0.6 ppm of iron, or 0.1 ppm manganese.

2. Class 2 waters in which the iron or manganese concentration does not exceed the limits imposed in paragraph 1 of this subsection may be treated with hexametaphosphate or similar compound.

3. The equipment for the removal of iron or manganese shall be so designed as to afford adequate protection to the water being treated.

4. Examination of designs for iron or manganese removal equipment will not include an evaluation of the efficacy of such equipment, but such equipment shall produce a water complying with the iron and manganese standards of the N.J. Secondary Drinking Water Regulations (N.J.A.C. 7:10-7.1 et seq.).

5. Wastewater shall be treated in accordance with the requirements of N.J.A.C. 7:10-11.3(f).

6. Banks of household-type units in parallel will not be considered as acceptable equipment for public water treatment plants.

7. Sodium cycle ion-exchange units for iron and/or manganese removal will not be acceptable unless, in the opinion of the Department, problems are satisfactorily resolved pertaining to the sodium concentration and adequate hardness of the treated water, adequate removal of precipitated iron and manganese compounds during the backwashing operation, and acceptable methods for disposal of the backwash water.

(d) Corrosion control rules are as follows.

1. Provision shall be made for corrective treatment when waters are corrosive to the distribution system or plumbing.

2. Chemical feed equipment shall comply with the provisions of section 9 of this subchapter.

3. Compounds intended to be fed to water for providing a protective film on the walls of distribution mains, and their proposed feed rates, shall receive the prior approval of the Department.

4. Cathodic protection will be accepted as a suitable method for the protection of elevated storage tanks and

standpipes against corrosion, but will not be considered acceptable for such protection of water mains.

5. Caustic soda and soda-ash (sodium carbonate) shall not be accepted for pH adjustment when the hardness of the water is less than 50 mg/l as CaCO_3 .

(e) Taste and odor control rules are as follows.

1. Provision shall be made for corrective treatment for objectionable tastes and odors in all waters derived from a surface source, and for groundwaters which have objectionable tastes and odors.

2. The equipment for the removal of objectionable tastes and odors shall be so designed as to afford adequate protection to the water being treated.

3. When sodium chlorite is to be used for generation of chlorine dioxide, proper provision shall be made for its storage and handling so as to eliminate any danger of explosion.

4. When powered activated carbon is to be used, there shall be adequate forced draft of the feeding equipment so as to eliminate any danger of explosion. It should be stored in a building or compartment which is as fireproof as possible, and nothing else shall be stored in the same building or compartment. The carbon feeder room shall be equipped with explosion-proof electrical outlets, lights, and motors.

5. When copper sulfate or other copper compounds are used, provisions shall be made to assure that the residual of copper in the treated and distributed water shall not exceed 1.0 mg/liter.

6. Examination of designs for taste and odor control equipment will not include an evaluation of the efficacy of such equipment, but such equipment shall produce a water of no objectionable taste or odor.

(f) Fluoridation rules are as follows.

1. Plans and engineering data submitted for fluoridation shall show the capability of the proposed plant to provide an accurately controlled fluoride-ion concentration in the finished water of not less than one part per million (1.0 ppm) nor more than one and five-tenths part per million (1.5 ppm).

2. Fluorine compounds shall be added at as many points in the water supply system as are necessary to ensure that all water being distributed to the consumer will have the proper concentration of fluoride-ion.

3. The following compounds will be accepted for use in public water supplies:

- i. Sodium fluoride;
- ii. Sodium silicofluoride;
- iii. Hydrofluosilicic acid.

4. Fluoride chemical shall be stored in covered or unopened shipping containers unless transferred to approved, covered, storage containers. Where storage containers are used, they shall be large enough to hold sufficient chemical for a minimum of one day's use. Hydrofluosilicic acid must be stored in covered, acid-resistant containers.

5. Feeding equipment shall comply with the applicable provisions of section 9 of this subchapter, and with the following requirements:

i. Solution feed equipment may be used to feed solutions of sodium fluoride or hydrofluosilicic acid. The feeding of sodium silicofluoride slurries will not be approved.

ii. Dry feeders may be of volumetric or gravimetric type. If volumetric feeders are used, they shall be mounted on suitable weighing scales. At least twelve (12) gallons of water per pound of sodium fluoride, or sixty (60) gallons per pound of sodium silicofluoride, shall be provided. A detention period of at least five minutes is required for sodium fluoride, and 15 minutes for sodium silicofluoride. The solution shall not be introduced directly into any pipe or conduit under negative pressure, and suitable means shall be provided to prevent siphonage of the fluoride solution.

iii. Floor surfaces adjacent to feeders shall have a smooth and impervious finish, and they shall be sloped to adequate drains to permit hosing the floor.

iv. Waste liquids or sludge containing fluorine compounds shall be disposed of by such means as may be approved by the Department. Approved dust control methods shall be used in handling dry chemicals. Exhaust air from vacuum conveying equipment shall be filtered and discharged outdoors. Where chemical containers are being dumped, an exhaust fan with filter and suitable duct work shall be used which provides an air velocity of at least 200 feet per minute at the opening through which the chemical is being dumped. Containers may be dumped in enclosures or through dust-tight connections without use of fan exhausts. Crystalline or granular forms of the chemical may be used to reduce dust control problems.

v. Approved vapor and gas control methods shall be used when hydrofluosilicic acid is handled. The acid shall not be handled in open vessels, but shall be pumped through a closed system with an air inlet from the outside.

vi. Specifications for fluoridation equipment shall include the provision of sufficient rubber or neoprene gloves and, where dry fluoride compounds are handled, U.S. Bureau of Mines approved dust respirators, for all personnel handling the chemical. Facilities shall be provided for washing hands and gloves.

vii. Fluoridation storage and feeding facilities shall be in rooms separate from other plant facilities, except they may be housed in the separate rooms utilized for gas chlorinators. Rooms in which fluorine compounds are to be stored or handled shall be secured against entrance by unauthorized persons.

viii. An approved kit shall be provided for the routine testing of water samples for fluoride content.

7:10-11.11 Pretreatment

(a) The term "pretreatment" as used in this section refers to the water treatment processes employed to prepare water for filtration, which include mixing, flocculation or softening, and sedimentation.

(b) General rules are as follows.

1. The number of pretreatment units shall be such that the requirements in subsection (g) of this section will be met when any single unit is out of service.

2. Sufficient data shall be included in the engineer's report to establish the type of dosage of the chemicals required for treatment.

3. Each pretreatment basin shall be equipped with a drain or drains to permit 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. Unless otherwise permitted, sludge shall not be discharged into any of the waters of this State. (See N.J.A.C. 7:10-11.3(f).)

(c) The application of chemicals to water in pretreatment shall be at locations where there is sufficient agitation to insure rapid dispersion of each chemical throughout the water, such as at pump suction or rapid mix basins.

(d) Flocculation rules are as follows.

1. Flocculation is required for all Class 3 and Class 4 waters.

2. Flocculation shall be accomplished by agitation under suitable mixing conditions.

3. The flocculation unit shall be designed with suitable 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. Ordinarily this will limit velocities to one foot per second (1 f.p.s.).

(e) Sedimentation rules are as follows.

1. Pretreatment by sedimentation will ordinarily be required for Class 3 waters, and shall be provided for all Class 4 waters.

2. Sedimentation basins may be rectangular or circular.

3. Depth of sedimentation basins shall be such as to make ample allowance for sludge accumulation or sludge removal equipment, and to provide for a reasonable depth of flow, normally at least six feet.

4. Inlet and outlet facilities shall be designed to minimize short-circuiting. If submerged inlet ports are used, they shall be so located as to avoid creating a disturbance of the settled floc.

5. When around-end baffling in a horizontal plane is proposed, the maximum surface loadings required in subsection (g) of this section shall be reduced fifty percent (50%).

6. The Engineer's Report should provide data to justify the surface loading proposed. If no surface loading justification is shown, a minimum detention period of four hours shall be required.

(f) Solids-contact units rules are as follows.

1. Use of solids-contact units will be considered for flocculation, lime softening, iron or manganese removal, and for settling.

2. Evidence shall be submitted to satisfy the Department that the equipment to be installed will operate satisfactorily.

3. Each unit shall have facilities for satisfactory flocculation of the water before it enters the settling areas.

4. Units shall be equipped with suitable sampling provisions to permit collection of samples from critical points in the process.

5. Units shall be installed under supervision of the manufacturer's representative who shall also supervise initial operation.

6. Outlet weir loadings shall not exceed twenty (20) gallons per minute per foot of length for softened water, nor ten gallons per minute per foot for flocculated water. Where orifices are used rather than weirs, their size, number and arrangement shall be such as to produce loadings equivalent to the requirements for weirs. Weirs or orifices shall be so arranged as to produce uniform vertical flow rates over the area of the tank.

7. Each solids-contact unit must have effective means for concentrating sludge for draw-off disposal.

8. Sludge piping shall be arranged so as to facilitate operation and cleaning. It shall not be less than three inches in diameter. Arrangements shall be provided for flushing the sludge piping with clear water.

9. Sludge valves shall be located outside of the tank.

10. Each unit shall be provided with equipment to attain intermittent automatic withdrawal, and manual takeover.

(g) Detention times and surface loadings rules are as follows.

Requirement	Flocculation or Iron or Manganese Removal	Lime Softening
Minimum Reaction Time		
Solids Contact Units		
Class 2 and 3 waters	10 minutes	20 minutes
Class 4 waters	20 minutes	20 minutes
Horizontal Flow Units		
Class 2 and 3 waters	20 minutes	20 minutes
Class 4 waters	30 minutes	30 minutes
Maximum Surface Loading Per square foot per minute (See paragraph (e)5 of this section).		
Solids Contact Units		
Class 2 and 3 waters	1.0 gallons	2.0 gallons
Class 4 waters	0.75 gallons	1.5 gallons
Horizontal Flow Units		
Class 2 and 3 waters	0.5 gallons	1.0 gallons
Class 4 waters	0.375 gallons	0.75 gallons

1. 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; and for horizontal flow units, on the volume of the flocculation or reaction chamber.

2. Surface loading rates for solids contact units will be calculated on the basis of the input flow and the horizontal area of upward flow in the clarification zone at a level five feet below the level of the discharge weirs or orifices; and for horizontal flow units, on the horizontal area of the water at the surface.

7:10-11.12 Filtration

(a) General rules are as follows.

1. Means shall be provided for cleaning and scraping of filters, and for placing or replacing the filter medium.
2. If the filter medium is to be reused, means shall be provided for washing it.
3. Water treatment facilities for the treatment of surface water shall be equipped with a turbidity monitoring device which will automatically analyze and record the effluent turbidity at intervals not less than once every hour.

(b) Total filter unit capacity shall be such that with one unit out of service, the maximum filtration rate of any of the remaining units will not exceed the requirements imposed by N.J.A.C. 7:10-11.2(c)5.

(c) Filter design characteristics are as follows.

1. Filter design shall be such as to afford adequate protection to the water distributed for public, potable and domestic purposes.

2. No filters shall contain any sanitary hazards; there shall be no common walls between treated and untreated waters; nor plumbing cross connections.

3. Filters for waters of Class 1 or Class 2 shall be of a design based upon operating experience at comparable locations.

4. Waters of Class 3 and Class 4 shall be subjected to adequate pretreatment prior to filtration, in accordance with the provisions of section 11 of this subchapter.

5. Except as provided in N.J.A.C. 7:10-11.1(b), filters for Class 3 or Class 4 waters shall comply with the following minimum requirements:

Filter Requirement According to Water Classification

Class of Water	3	4
Maximum filtration rate	5 gpm/ft ²	3 gpm/ft ²
Maximum effective size of filter media		
Rounded Materials	0.60 mm	0.55 mm
Angular Materials	0.50 mm	0.45 mm
Maximum uniformity coefficient	1.6	1.6
Minimum thickness of filter medium	18 inches	24 inches
Maximum head loss through filter medium	12 ft. of water	8 ft. of water

6. Suitable means shall be provided for control of filtration rates.

7. Dual beds of sand and anthracite are acceptable and, where used, the anthracite may be twice the effective size stated under paragraph 5 of this subsection. Sand thickness should be at least twelve (12) inches.

8. At least twelve (12) inches of graded gravel should be placed over underdrains.

9. Slow sand filters may be used on special justification.

(d) Backwash water rules are as follows.

1. Backwash water shall have been filtered.
2. For rapid sand filters, available wash rate shall be sufficient to provide a minimum of thirty percent (30%) expansion of the filter medium. Supplemental washing facilities such as surface wash or air scour units are recommended.
3. Washwater storage allowance shall be sufficient to wash not less than two filter units or to provide not less than two percent (2%) of the daily output capacity.
4. Unless otherwise permitted, untreated filter backwash shall not be discharged into any of the waters of this State. (See N.J.A.C. 7:10-11.3(f).)

7:10-11.13 Disinfection

(a) General rules are as follows.

1. Disinfection of public community water supplies shall not be considered as a basis for deviation from the requirements of all other sections.

2. Disinfection of public community water supplies shall, in general, be accomplished with chlorine or chlorine compounds. The use of other disinfecting agents will be considered on a case-by-case basis provided that adequate justification is provided and that provision is also made for a postchlorination process to provide an adequate chlorine residual in the delivered water.

3. Chlorination should follow all other forms of treatment, except that prechlorination may be practiced if it is applied in addition to postchlorination.

4. Chlorination without other treatment will be accepted only for Class I waters.

5. Where chlorination and screening or straining are proposed as the sole treatment for surface waters, the engineer shall provide supporting data including raw water characteristics showing seasonal variations.

(b) Acceptable equipment rules are as follows.

1. Gas chlorinators shall be of the solution feed type.

2. Hypochlorite feeders of the positive-displacement type will be acceptable. In general these should be considered satisfactory only for the disinfection of a water source with a capacity not exceeding one million gallons per day (1.0 mgd).

3. If chlorine dioxide is used as the disinfectant, sodium chlorite shall be injected into the discharge line of a solution feed gas type chlorinator, with subsequent formation of the chlorine dioxide in a reaction chamber.

4. If ammonia is added, the ammonia system shall be separated from the chlorine system so that the ammonia and chlorine gases will not mix.

5. Superchlorination followed by dechlorination will be accepted, provided that the minimum chlorine contact periods required in subsection (e) of this section are complied with.

(c) For postchlorination, the capacity of the disinfection device shall be such as to produce free chlorine residuals after the required contact periods as are required in subsection (e) of this section. These conditions must be attainable even when the maximum flow rates coincide with an anticipated maximum chlorine demand.

(d) Standby equipment rules are as follows.

1. Chlorination equipment shall be in duplicate for all plants with a capacity in excess of one million gallons per day (1 mgd). For smaller plants sufficient essential spare parts shall be provided to guarantee no interruption in the delivery of a properly disinfected water.

2. For larger installations the Department may require the provision of sufficient equipment to assure that full disinfection may be maintained where the largest single chlorinator is out of service.

(e) Chlorine contact period and chlorine residuals rules are as follows.

1. To afford adequate protection of the various classes of waters as defined in N.J.A.C. 7:10-11.1(e), provision shall be made in the design of the facilities to ensure the following minimum chlorine contact periods prior to delivery of disinfected water to the first consumer. The engineer's report shall demonstrate that this requirement will be met.

i. Waters of Class 1 and Class 2 shall be provided with a chlorine contact period of at least five minutes to produce the minimum free chlorine residuals as are required in paragraph 3 of this subsection; or at least thirty (30) minutes in the case of combined chlorine residuals.

ii. Waters of Class 3 shall be provided with a chlorine contact period of at least thirty (30) minutes to produce the minimum free or combined chlorine residuals as are required in paragraph 3 of this subsection.

iii. Water of Class 4 shall be provided with a chlorine contact period of at least thirty (30) minutes to produce the minimum free chlorine residuals as are required in paragraph 3 of this subsection.

2. In the event that both prechlorination and post-chlorination are to be applied to waters of Class 3 and Class 4, the requirements of subparagraphs 1ii and 1iii of this subsection shall apply only to the prechlorination process. Post-chlorination may comply with the requirements of subparagraph 1i of this subsection.

3. The chlorination facilities shall be so designed as to be capable of producing the following chlorine residuals at various pH values.

Required Chlorine Residuals at Various pH Values

pH Value	Available Free	Chlorine Residual Combined
Up to 7.0	0.2 ppm	1.0 ppm
7.0 to 8.0	0.3 ppm	1.5 ppm
8.0 to 9.0	0.4 ppm	2.0 ppm

(f) Requirements for gas chlorinators are as follows.

1. Gas chlorinating devices shall be placed in separate rooms with outside entrance only and provided with suitable ventilation including an exhaust fan near floor level. The doors of such rooms shall open outward and shall be provided with panic type hardware (push bar for opening the door) on the inside of the door.

2. An automatic alarm, or observation window, to permit visual inspection without opening the door of the chlorination room shall be provided.

3. Gas chlorinating facilities shall be provided with a minimum of two chlorine cylinders interconnected by a manifold and suitably valved to permit speedy changeover when the in-use cylinder becomes exhausted. In water treatment plants without 24 hours per day supervision an automatic switchover valve shall be provided.

4. Scales shall be provided for determining the loss of weight of chlorine cylinders.

5. An ample supply of water shall be available for operating the chlorinator, and the water supply shall be adequately protected against backsiphonage.

6. The rotameter used in a gas chlorinator shall be sized so as to prevent abnormally high chlorine dosage in the event that the controls are accidentally adjusted to give a higher chlorine dosage.

7. Automatic chlorinators with chlorine residual recorders and alarm systems to indicate chlorinator failure shall be installed if required by the Department.

8. A gas mask, preferably with air pack or hose to the exterior, shall be provided and maintained in good operating condition. It shall be stored in a readily accessible location outside the chlorine room.

(g) Requirements for hypochlorinators are as follows.

1. Provision shall be made for heating the room in which the hypochlorinator is housed.

2. Each hypochlorinator shall be provided with an anti-siphon device to prevent the siphoning of the chlorine solution into the water supply during periods of negative pressure.

3. A solution tank with minimum storage capacity of 36 hours shall be provided, and shall be of durable material which is resistant to fracture and inert to reaction with the hypochlorite solution.

4. An ample supply of water shall be available for the preparation of the hypochlorite solution, and shall be adequately protected against back-siphonage.

(h) Auxiliary equipment rules are as follows.

1. A comparator, suitable for determining chlorine residuals by the D.P.D. method in accordance with a standard procedure in the current edition of Standard Methods for the Examination of Water and Wastewater, and supplies of the necessary reagents, shall be provided for measuring chlorine residuals.

2. Where gas chlorination is used, an ammonia solution shall be available for testing for chlorine leaks.

SUBCHAPTER 12. STANDARDS FOR THE CONSTRUCTION OF PUBLIC NON-COMMUNITY AND NON-PUBLIC WATER SYSTEMS

7:10-12.1 Scope

Unless otherwise provided by the rule or statute, the following shall constitute the rules of the Bureau of Potable Water and shall govern construction of non-public and public non-community water systems, excluding water supply systems serving State and county owned facilities. These rules are promulgated pursuant to N.J.S.A. 58:11-23 et seq. and 58:12A-1 et seq.

7:10-12.2 Construction

(a) These rules shall be liberally construed to permit the department, Bureau of Potable Water and its various agencies to discharge its statutory functions.

(b) The Commissioner or the Director of the Division of Water Resources may, upon notice to all parties, in the public interest, relax the application of these rules.

7:10-12.3 Practice where rules do not govern

(a) The Commissioner may rescind, amend or expand these rules from time to time, and such new rules shall be filed with the Secretary of State as provided by law.

(b) The Commissioner, the Director of the Division of Water Resources or any agency chief shall exercise his discretion in respect to any other matters not governed by these rules.

7:10-12.4 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings and interpretations unless the context clearly indicates otherwise.

“Adequate protection” means construction methods which assure protection of potable water from contamination, adequacy of bacteriological, physical and chemical water quality as delivered to the consumer, and with sufficient pressure and volume to meet the needs of the consumers; and the term “adequately protected” shall be construed accordingly.

“Administrative authority” means the local board of health having jurisdiction.

“Alter” means the replacing or repairing of any portion of an existing water supply system; and the terms “alteration” and “altering” shall be construed accordingly.

“Approved” means accepted in writing by the department of administrative authority under applicable specifications stated or cited in these standards, or accepted as suitable for the proposed use under procedures and powers delegated in these standards; and the word “approval” shall be construed accordingly.

“Artesian well” means a well which derives its water from below a confining layer and in which the water rises above the aquifer.

“Aquifer” means a water-bearing stratum used as a source of potable water supply.

“Building sewer” means the pipe extending from the outer wall of the building, or as defined in the plumbing code, to a septic tank or approved place of disposal including a public sewer, and the lines to all parts of the disposal system, except those classified as distribution lines.

“Certification” means a written statement by the administrative authority that a proposed water supply system is in compliance with the provisions of the Realty Improvement Sewerage and Facilities Act as revised, (N.J.S.A. 58:11-23 et seq.) and/or the New Jersey Safe Drinking Water Act (N.J.S.A. 58:12A-1 et seq.) and/or regulations promulgated under either.

“Cesspool” means a covered pit with open jointed lining for the reception of untreated sewage, the liquid portion of which is disposed of by seepage or leaching into the surrounding soil and the solids or sludge being retained in the pit.

“Cistern” means a tank for the reception of rain water from a roof or roofs intended for potable purposes.

“Confining layers” means a formation which separates aquifers and which consists of material that does not permit perceptible vertical transmission of water to other aquifers; and includes such formations as clay, unfractured rock, and so forth.

“Construct” means the building, assembly or installation of a new water supply system or the enlargement or alteration of an existing water supply system; and the term “construction” shall be construed accordingly.

“Contamination” means the presence of sewage, industrial wastes, organisms of the coliform group, or harmful or objectionable material which is in or may gain access to potable water.

“Department” means the New Jersey Department of Environmental Protection.

“Disposal bed” means that part of a disposal field for sanitary sewage comprising a shallow area from which the entire earth contents have been removed and the excavation partially filled with a satisfactory filtering material in which

distribution lines have been laid and the entire area covered with top soil and suitable vegetation.

“Disposal field” means an area consisting of disposal trenches, a disposal bed or a combination thereof used for dispersion of the liquid portion of sanitary sewage into the ground as close to the surface as feasible.

“Disposal trench” means a shallow ditch with vertical sides and flat bottom partially filled with a satisfactory filtering material in which a single distribution line has been laid, covered with top soil and suitable vegetation.

“Distribution box” means a watertight structure which receives sanitary sewage effluent from a septic tank and distributes such sewage effluent to two or more pipelines leading to a disposal field.

“Distribution line” means a series of open-jointed or perforated pipes used for dispersion of sewage into a disposal field.

“Distribution main” means a pipe for the transmission or conveyance of potable water to more than one realty improvement.

“Diversion permit” means written authorization issued by the Division of Water Resources, Department of Environmental Protection, pursuant to N.J.S.A. 58:4A-2 for the private use or diversion of ground water in excess of 100,000 gallons per day from a well or other percolating source or sources in areas which have been delineated under the provisions of that law.

“Dry well” means a covered pit with open-jointed lining through which drainage from roofs, basement floors or areas may seep or leach into the surrounding soil.

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

“Finished water” means potable water which does not require either treatment, or further treatment.

“Individual sewage disposal system” means a system for the disposal of sanitary sewage into the ground, which is so designed and constructed to treat such sewage in a manner that will retain most of the settleable solids in a septic tank and discharge the liquid portion to an adequate disposal field.

“Industrial waste” means liquid or solid waste resulting from the processes employed in industrial establishments.

“Locate” means the designation of the site or place of the sources or other appurtenances of a water supply system; and the term “location” shall be construed accordingly.

“Non-public water system” means a water system that is not a public water system.

“Oversize drill hole” means an excavation which is larger than the outside diameter of the well casing, constructed for the emplacement of a well.

“Person” means an individual, association, company, corporation, firm, joint stock company, partnership, or society.

“Pitless well adapter” means a device fabricated at the job site designed for attachment to one or more openings through a well casing, and so constructed as to prevent the entry of contamination into the well or potable water, conduct water from the well, protect the water from freezing or extremes of temperature and provide access to water system components within the well.

“Pitless well unit” means a pre-assembled device which extends the upper end of a well casing to above grade, provided with a pitless well cap, and so constructed as to prevent the entry of contamination into the well or potable water, conduct water from the well, protect the water from freezing or extremes of temperature, and provide access to the well and to the water system components within the well.

“Pitless well cap” means a watertight, sanitary device that covers and encloses the upper termination of a pitless well unit or the well casing, and provided with water-tight connections for electrical power lines and well vent.

“Potable water” means any water used or intended to be used for drinking and culinary purposes.

“Public water system” means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily 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 “community water system” or a “non-community water system.”

“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 non-community water system” means a public water system that is not a community water system.

“Realty improvement” means any proposed new residence or other building (including condominiums, garden-apartments, town houses, mobile homes, and so forth) the useful occupancy of which shall require the installation or erection of a water supply system. Each family unit in a proposed multiple family dwelling shall be construed to be a separate realty improvement.

“Sanitary sewage” means any liquid waste containing animal or vegetable matter in suspension or solution, or the water-carried wastes resulting from the discharge of water closets, laundry tubs, washing machines, sinks, dishwashers or any other source of water-carried waste of human origin or containing putrescible material.

“Sanitary sewer” means a pipe which carries sewage and to which storm, surface and groundwater waters are not intentionally admitted.

“Seepage pit” means a covered pit with open-jointed lining material through which septic tank effluent or laundry waste may seep or leach into the surrounding soil.

“Septic tank” means a watertight receptacle which receives the discharge of sanitary sewage, and is designed and constructed so as to permit settling of settleable solids from the liquid, digestion of the organic matter by detention, and discharge of the liquid portion into a disposal field.

“Service line” means a pipe for the transmission or conveyance of potable water under pressure either from an individual well or from a distribution main to a single realty improvement.

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

“Static water level” means the elevation of water in a well when no pumping is in progress.

“Subsurface sewage disposal system” means that part of an individual sewage disposal system comprising the disposal field.

“Suction line” means a pipe which conveys water at less than atmospheric pressure from a well to a pump.

“Surface water” means that water found on the ground surface or contained in a stream, pond, lake or other natural watercourse; and the terms “surface source” and “surface supply” shall be construed accordingly.

“Undersize hole” means an excavation which is no larger than the internal diameter of the well casing, constructed for the emplacement of a well.

“Water bearing formation” shall mean and include the same definition as given for aquifer.

“Water table well” means a well which derives its water from an unconfined formation which has no protective confining layer above it.

“Well” means an artificial excavation that derives water from the interstices of the rocks or soil which it penetrates.

7:10-12.5 General concepts

(a) Public non-community and non-public water systems shall not be constructed or altered except in accordance with these standards.

(b) When two or more adjacent water systems are owned by the same person and, in combination, serve 15 or more realty improvements, they shall be constructed in accordance with the rules applicable thereto, and application for approval therefor shall be submitted to the department.

(c) The following design considerations shall be considered in providing a potable water system for a realty improvement:

1. If an adequate public water system is available and if connection can legally be made thereto, the realty improvement shall be supplied with water from that source;
2. The advisability of establishing a public water system;
3. The dependability of the source of water supply;
4. Geology;
5. Potential and known sources of contamination;
6. A balanced system of supply, pumping, treatment, distribution and finished water storage facilities to meet the peak demand;
7. No material shall be used in the installation that will cause the delivered water to be toxic.

7:10-12.6 Deviations from standards

When it can be established by the applicant that the proposed installation provides adequate protection, submitted material which deviates from these standards will be examined on the basis of the conservative evaluation of data submitted by the applicant.

7:10-12.7 Water volume requirements

Water supply systems shall be designed to provide at least the minimum quantity of potable water as determined from table 1, and with a minimum flow rate of two gallons per minute at each outlet or plumbing fixture.

TABLE 1
Minimum Water Requirements

Type of Establishment	Gallons per Person per Day
1. Cottages	100
2. Single family dwellings	100
3. Multiple family dwellings (apartments)	75
4. Rooming houses	50
5. Boarding houses **	75
a. For each nonresident boarder	15
6. Hotels **	50-75
7. Motels and tourist cabins	50-75
8. Mobile home parks	100
9. Restaurants	
a. Sanitary demands, per patron	5

Type of Establishment	Gallons per Person per Day
b. Kitchen demand, per patron	5
c. Kitchen and sanitary demand	10
10. Camps *	
a. Barracks type	50
b. Cottage type	40
c. Day camps (no meals served)	15
11. Day schools	
a. No cafeteria or showers	10
b. With cafeteria and no showers	15
c. With cafeteria and showers	20
d. Cafeteria, showers and laboratories	25
12. Boarding school **	100
13. Day workers: Office, industrial, and so forth (8 hr. shift)	25
14. Hospitals (depending on type)	150-250
15. Institutions other than hospitals	75-125
16. Picnic grounds and comfort stations	
a. Toilet only	10
b. Toilet and showers	15
17. Swimming pools and bathhouses	10
18. Club houses **	
a. With resident members	60
b. For each nonresident member	25
19. Nursing homes	150
20. Campgrounds—where individual sewer hook-ups are available	100 per site—(Laundry extra, increased by 50 per cent)
21. Stores, office buildings	0.125 gal/sq. ft.
22. Self-service laundries	50 gal/wash

* When more than one use will occur, the multiple use shall be considered in determining water quantity.

** Includes kitchen demand at 10 gallons per person per day. If laundry demands are anticipated, estimated flows shall be increased by 50 per cent.

7:10-12.8 Sources of water

(a) The source of water shall be derived from wells, except that the use of springs and surface water may be permitted under certain circumstances by the administrative authority only if well water is not available and if the water derived therefrom is adequately treated. Dug wells, Kelly concrete-cased wells and/or equivalents, and cisterns are prohibited.

(b) Duplicated wells and pumping equipment or equivalent shall be provided when the average water demand exceeds 30,000 gallons per day.

7:10-12.9 Frost protection

All parts of the water supply system shall be designed, located and constructed to protect the water against freezing.

7:10-12.10 Physical connection

No physical connection shall be established between any water supply system installed in accordance with these standards and a public community water system unless the physical connection is approved in accordance with the provisions of the rules governing such interconnections (N.J.A.C. 7:10-1.1 et seq.).

7:10-12.11 Priming systems

Priming systems for pumps shall be such as to prevent the contamination of adequately protected water.

7:10-12.12 Disinfection of waterworks facilities

(a) After completion or alteration of any water system or water treatment facility therefor (including transmission and distribution mains and finished water storage reservoirs and tanks), all surfaces with which adequately protected water may come into contact shall be effectively disinfected before being placed into service.

(b) Acceptable methods of disinfection will include, but not necessarily be confined 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 parts per million 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 parts per million with a minimum contact period of one hour.

(c) Proposed method or methods for the disinfection of waterworks facilities shall be included in the materials to be submitted, as required in this subchapter.

7:10-12.13 Distances

(a) The minimum distances for the location of the various component parts of a water supply system installed in accordance with these standards shall comply with those in table 2.

TABLE 2
Minimum Proximity Distances—Feet

Component	Building Sewer	Septic Tank	Distribution Box	Disposal Field	Seepage Pit	Dry Well	Cesspool
Well	50	50	50	100	100	50	150
Suction line	50	50	50	100	100	50	150
Water Service Line	5	10	10	10	10	—	25

1. Where gravel, limestone, or fractured, creviced or fissured rock formations are encountered, a greater distance of a well from a subsurface sewage disposal system may be required by the administrative authority.

2. Distance of a well from disposal fields and seepage pits may be reduced to a minimum of 50 feet, when approved by the administrative authority but only when the well is provided with a casing to a depth of 50 feet or more, and where said casing extends to, and is sealed into, a confining layer separating the aquifer from the stratum of soil used for sewage disposal.

3. The construction of new cesspools is regulated by the companion regulations, N.J.A.C. 7:9-2.1 et seq. "Standards for the Construction of Sewage Facilities for Realty Improvements." Reference to cesspools is made herein to control the construction for alteration of a water supply system on existing premises wherein a prior approved cesspool may be located.

4. See section 37 of this subchapter for location requirements for distribution mains.

7:10-12.14 Well room

A well shall not be installed within the cellar or basement of any realty improvement. A well may be installed in an offset basement pump and well room provided the well casing extends at least twelve inches above the floor of the adjoining basement and the offset room is constructed with a water-tight roof or cover with access so as to permit the removal of any part of the well construction or pumping equipment for maintenance, alteration, or repair.

7:10-12.15 Geologic regions

(a) For the purposes of these standards the following geologic regions shall apply: (see Table 3).

Editor's note: Table 3 is not reproduced herein. It is available from:

Bureau of Water Quality Planning and
Management
Division of Water Resources
P.O. Box 2809
Trenton, N.J. 08625

1. Region 1 (Coastal Plain): All of New Jersey south and east of a line drawn between Trenton and New Brunswick. Aquifers are generally sand and/or gravel, semi-consolidated "rock," or shell beds.

2. Region 2 (Piedmont): That part of New Jersey extending northwest of a line drawn between Trenton and New Brunswick to the contact area between the Triassic Brunswick Formation and the Precambrian crystalline rocks—Paleozoic formation (approximated by trending line drawn between Holland in the south and through Clinton, Bernardsville, Boonton, Oakland and to Suffern, New York, in the north. Aquifers are generally sandstone, argillite, shale, diabase, basalt, and sand and/or gravel.

3. Region 3 (Highlands): That part of New Jersey northwest of Region 2. Aquifers are generally creviced granite, gneiss, schist, phyllite, quartzite, metagabbro, diorite and similar rock, limestone, dolomite, shally limestone, creviced sandstone, shale and siltstone, and sand and/or gravel.

7:10-12.16 Well construction within regions

(a) The construction of wells shall, in general, be affected in accordance with the following requirements for the geologic region in which the well may be located. Construction methods may be modified for local geological conditions. Such construction modifications shall be in accordance with the applicable construction requirements for the region which may be more closely identified with the local conditions. Well construction requirements are summarized in Table 4.

1. Region 1 (Coastal Plain):

i. Water table well:

(1) Either of the following construction methods is acceptable:

(A) Casing driven into an undersize hole;

(B) An oversize drill hole of diameter not less than four inches greater than that of the casing to be installed and constructed to a minimum depth of 10 feet and the casing driven into the water-bearing stratum. If necessary, a temporary outer casing of the same diameter of the oversize hole shall be installed to prevent cave-in.

(2) Casing shall not be less than two inches in diameter nor less than 50 feet in depth unless the available water is at a lesser depth. In no case, however, shall the casing be less than 15 feet in depth.

(3) Diameter of screen shall not be less than 1½ inches.

(4) Annular space between the casing and the oversized hole shall be grouted in accordance with the requirements of section 20 of this subchapter. The temporary outer casing, if used, shall be withdrawn during the grouting operation.

(5) When the static water level is greater than 125 feet below ground surface and/or the pumping level is greater than 150 feet below ground surface, minimum diameter of casing and screen shall be four inches and the casing shall extend at least 20 feet below the pumping level.

2. Region 2 (Piedmont):

i. Water table and artesian wells:

(1) An oversized drill hole of diameter not less than four inches greater than that of the casing to be installed shall be constructed to a minimum depth of 20 feet into unweathered rock. If necessary, a temporary outer casing of the same diameter as the oversize hole shall be installed to prevent cave-in of the overburden.

TABLE 4—SUMMARY OF WELL CONSTRUCTION REQUIREMENTS

	Oversize Drill Hole		Casing	Depth	Screen
	Diameter	Depth			
Region 1					
a. Water Table Well	Casing plus 4 inches (1)	Min. 10 ft.	Min. 2 inches	Preferably 50 ft. Minimum 15 ft.	Min. 1½
b. Artesian Well	Casing plus 4 inches (1)	To base of confining layer immediately above aquifer used Min. 30 ft.	Min. 2 inches (2)	To base of confining layer immediately above aquifer used. Min. 30 ft.	Min. 1½
Region 2					
Water Table and Artesian Wells	Casing plus 4 inches	Min. 20 ft. into unweathered rock	Min. 6 inches	Min. 20 ft. into unweathered rock	Not normally used
Region 3					
a. Water Table and Artesian Wells	Casing plus 4 inches	Min. 20 ft. into unweathered rock	Min. 6 inches	Min. 20 ft. into unweathered rock	Not normally used
b. Cavernous Limestone	Casing plus 4 inches	Min. 50 ft.	Min. 6 inches	Min. 50 ft.	None

(1) Except when casing is driven into an undersize hole. (See N.J.A.C. 7:10-3.16(a)1.i(1).)

(2) If the static level is greater than 125 feet below ground surface and/or the pumping level is greater than 150 feet below ground surface, a minimum casing diameter of 4 inches is required.

(2) Casing shall not be less than six inches in diameter and shall be driven tightly into the unweathered rock below the oversize hole.

(3) Diameter of screen (if used), shall not be less than six inches. In Region 2 a screen is not normally necessary except in sand and gravel or highly-fractured rock.

(4) Annular space between the casing and the oversize hole shall be grouted in accordance with the requirements of section 20 of this subchapter. The

temporary outer casing, if used, shall be withdrawn during the grouting operation.

3. Region 3 (Highlands):

i. Water table and artesian wells:

(1) Well construction requirements are the same as those for Region 2 except in limestone or other creviced rock formations the casing shall extend to a depth of at least 50 feet and shall be sealed into the rock in such a manner as to minimize the entrance of unsuitable water from crevices above the approved sources.

(2) Channels and crevices in limestone may not hold grout. Packers must frequently be used to seal large water-filled channels and crevices so as to hold the grout. Limestone and grouting may not be successful in excluding contamination.

7:10-12.17 General construction requirements for wells

(a) The actual on-site work of drilling, constructing, altering, and repairing a well shall be under the supervision of a person in possession of a valid license issued by the New Jersey State Well Drillers Examining and Advisory Board.

(b) During construction, the area surrounding the well shall be maintained in a clean condition and surface drainage shall be diverted away from the well.

(c) No driving shall be done with the assistance of a water jet without prior specific approval of the administrative authority. Water used during well construction shall be obtained only from a source approved by the administrative authority.

(d) Water-bearing formations that are known to be contaminated or those identified by the department as being in danger of contamination shall be sealed off with grout. Sealing shall be accomplished by a method approved by the department.

(e) Prior to final completion of the well, the casing shall be capped and any open annular space covered until the well has been grouted and the pump installed. The cap shall be either treaded onto the casing or be a friction type device which locks onto the outside of the casing, or any other type of cap as may be approved by the administrative authority.

(f) After construction of the well it shall be properly developed so as to obtain the best practical yield and quality of water to be derived therefrom. The water produced shall be visibly free of sand and/or silt.

(g) Unsuitable or non-productive wells shall be sealed in accordance with the requirements of the "Standard Specifications for the Sealing of Abandoned Wells" promulgated by the Bureau of Water Supply Planning and Management of the Department of Environmental Protection at N.J.A.C. 7:20-3.1 et seq.

7:10-12.18 Well casings

(a) Casing used shall be approved by the National Sanitation Foundation, and either the American Water Works Association or the American Society for Testing and Materials.

(b) Plastic well casing shall be Schedule 40 or better as specified in the American Society for Testing and Materials Standard D1785 or ASTM D1527, or the latest revision thereto.

(c) All plastic well casing shall be installed in accordance with the requirements of table 5.

(d) Plastic well casing shall be limited to use in sand and/or gravel formations.

(e) Metal well casing shall be water-tight and of new, undamaged steel pipe or other equivalent suitable metal. Casing sized four inches or larger in diameter shall have a minimum wall thickness of one-quarter inch. For the purposes of this subsection, casing withdrawn from a well under construction shall not be deemed used or reclaimed.

(f) Outer casings and liners or temporary casings and liners installed without driving may be standard pipe weight or lighter. Lighter weight materials shall be of such minimum thickness as is required to withstand the structural load imposed by conditions inside and outside the well. The outer casings shall be withdrawn during grouting.

(g) Casing and liner pipe joints shall be water-tight for protection against contamination.

TABLE 5

Requirements for Plastic Well Casings

Material	Nominal Size (inches)	Maximum length (feet) *	
		Schedule 40	Schedule 80
Type I PVC or ABS **	3	600	1,350
	4	400	950
	6	200	650
Type II PVC or ABS **	3	450	1,100
	4	350	800
	6	200	550

* These lengths may not be safe under all conditions. This table does not apply to well screens.

** Or other plastic material as approved by the department.

7:10-12.19 Well screens

(a) A well screen shall be provided where necessary to insure delivery of water which shall be visibly free from sand and/or silt.

(b) Plastic well screens shall be Schedule 40 or better as specified in ASTM D1785 and ASTM D1527 or the latest revision thereto for the specified material.

(c) Well screen openings shall provide the maximum amount of open area, consistent with strength of screen material and sediment grain size of the water bearing formation or any sand or gravel pack placed adjacent to the screen. The screen shall permit maximum water transmission without clogging.

(d) Well screens other than those made commercially, which are constructed by creating openings or slots in the casing and/or liner by any mechanical contrivance, are prohibited except in creviced rock, fissured rock, or coarse gravel.

(e) The well screen shall be provided with such fittings as are necessary to seal it to the casing and to close the bottom of the screen.

7:10-12.20 Grouting of annular space

(a) Except with the approval of the department, only the following materials shall be acceptable for the grouting of the annular space between the oversize drill hole and the casing:

1. Neat Portland cement or quick setting cement utilizing no more than six gallons of water per 94 pound sack of cement.
2. Neat Portland cement or quick setting cement mixed with no more than five pounds of sodium-base bentonite clay per 94 pound sack of cement and no more than six gallons of water.
3. Neat Portland cement or quick setting cement mixed with sand in 1:1 ratio and no more than six gallons of water per 94 pound sack of cement.
4. Sodium-base bentonite clay or an approved sealing gel in a ratio of one pound of sealing material per gallon of water. (Limited to use in Region I only.) Bentonite clay shall not be used for grouting in those instances where it will come into contact with ground water of pH less than 5.0 and/or a total dissolved solids content in excess of 1,000 ppm.

(b) Methods include the following.

1. Pressure grout shall be placed in one continuous operation in an upward direction from the bottom to the top of the annular space. The grout seal shall not extend above the point of attachment of a pitless well installation or sanitary seal.
2. Gravity placement shall be limited to rock wells. When utilized, sufficient quantity of fast-setting cement shall be placed in the oversize drill hole to insure that the annular space will be filled completely as the plugged casing is lowered and driven into the rock.

(c) General provisions are as follows.

1. Grouting in Region I has the following requirements.
 - i. The annular space shall be completely filled with cement grout, bentonite clay, or approved gel from the top of the well or base of the pitless well installation or sanitary seal to no less than 10 feet below ground surface for artesian wells.
 - ii. When the casing is driven into an undersize hole, provision for grouting shall be waived.
2. Grouting in Regions 2 and 3: Cement grout shall extend from the top of the well or base of the pitless well installation or sanitary seal to the bottom of the casing. Since channels and crevices in limestone may not hold

grout, packers will frequently be required to seal large water-filled crevices so as to hold the grout.

3. When Portland cement is used, no additional drilling shall be done on the well for a period of 14 hours after grouting. The time may be reduced to one hour when sodium-base bentonite, approved gel, or quick setting cement is used.

4. During the grouting operation, the casing shall be maintained in a centered position within the oversize drill hole.

7:10-12.21 Well head

(a) The well head shall be so constructed as to assure the maximum protection of the well and to exclude entry of any contaminant.

(b) When the casing is brought above grade or is located in an offset basement pump room, the top of the well casing shall be located not less than 12 inches above grade or basement floor.

(c) Whenever possible the pump shall be so located and designed as to make the use of a pump pit unnecessary. Under extenuating circumstances, pump pits may be accepted by the administrative authority on condition that adequate provision is made for their drainage by a sump pump or other arrangement. Direct connections to a sanitary sewer or storm drain shall not be permitted.

(d) The well head shall be provided with either a pitless installation or a sanitary seal.

(e) The space between the pump column and the casing of each well shall be provided with a vent which shall be protected with a down-facing elbow or mushroom type head located at least 12 inches above flood levels. All vents shall be screened against the entry of insects.

(f) Wells in which pumping equipment is not installed shall be properly capped to exclude the entry of contamination pending such installation.

7:10-12.22 Pitless well installation

(a) General provisions are:

1. A pitless well installation shall consist of either a pitless well unit or pitless well adapter, and a pitless well cap.
2. Pitless well units, pitless well adapters and pitless well caps shall be constructed in accordance with criteria C-8 of the National Sanitation Foundation or the Recommended standards (PAS-1) of the Water Systems Council.
3. The pitless well installation shall terminate not less than 12 inches above the ground surface, and above flood elevation, and shall be provided with a pitless well cap

and a well vent which shall be protected with a downfacing elbow or mushroom-type head located above flood level and screened against the entry of insects.

4. The cement grouting of the annular space of the well shall extend up to, but not encase, the connection between the well casing and the pitless installation.

5. The lateral discharge line shall be provided with a minimum of 3.5 feet of earth cover or a sufficient earth cover to prevent freezing.

(b) Pitless well adapters rules are:

1. The hole used to install the lateral discharge line to the well casing shall be made in such a manner as to provide a watertight connection.

2. The exterior connection between the adapter and the well casing may be welded or may be of the threaded or clamp-on gasket type. Extreme care shall be exercised when the connection is welded to assure a complete, watertight seal. A clamp-on gasket adapter shall be installed only on a smooth, clean surface.

(c) Pitless well units rules are:

1. At the point of attachment to the well casing a pitless well unit may be welded, threaded, or of the slip-on type with O-ring gasket, and shall be of watertight construction.

i. If the connection is to be by means of a field weld, the pitless well unit must be specifically designed for welding. The only field welding permitted shall be that needed to attach the pitless well unit to the well casing.

ii. If the connection is of the slip-on type with O-ring gasket, the surface of the well casing shall be smooth and clean.

2. The field connection between the pitless well unit and the lateral discharge line shall be threaded, flanged on a mechanical joint, and shall be so constructed and installed as to be watertight.

7:10-12.23 Records

(a) Each well shall be tested for yield and drawdown. This information shall be recorded on the well record by the driller and be submitted to the Bureau of Geology.

(b) A construction record outlining the types of materials used in the construction of each well shall be submitted to the Bureau of Geology as an addendum to the well record.

7:10-12.24 Springs

(a) The use of springs shall not be accepted except with the specific approval of the administrative authority and only if well water is not available and if the water derived therefrom is adequately treated.

(b) Springs shall be provided with an encasement of concrete or other durable material to exclude contamination, but so installed as not to restrict the flow of water into the encasement.

(c) The walls of the encasement shall be extended above the elevation of the surrounding ground to prevent the entrance of surface water, and the roof shall be provided with a watertight access cover so that the interior of the encasement may be serviced.

(d) The encasement shall be provided with an overflow constructed so as to prevent erosion of the fill surrounding the structure. The overflow shall be so constructed as to prevent the ingress of rodents, and shall be downfacing.

(e) The joint between the encasement wall and any pipe passing through the wall shall be so constructed and installed as to prevent the entrance of surface water.

7:10-12.25 Cisterns

Cisterns shall not be accepted as a source of potable water.

7:10-12.26 Surface water supply

(a) Surface water shall not be accepted as a source of potable water for a non-public or public non-community water system except with the specific approval of the administrative authority and only when an alternate source of supply is unavailable. If utilized, adequate and continuously operative water treatment facilities are required.

(b) The intake pipe for water derived from a surface source shall be located at least one foot above the bed of the stream or other surface source so as to exclude bottom debris. Each intake shall be protected by a durable screen to prevent the entrance of debris and fish.

7:10-12.27 Design; pumping equipment

(a) Pumps and appurtenant equipment shall be designed and installed to insure a contamination-proof and frost-proof installation. Pumps shall be certified under Water Systems Council Testing and Rating Standards.

(b) Each pumping system shall be provided with a foot-valve.

(c) In a screened well, the pump setting and suction inlet shall be so located that the pumping level of the water cannot be drawn below the top of the screen.

(d) Suction lift pumps shall not be used where the maximum suction head exceeds 22 feet.

7:10-12.28 Location; pumping equipment

(a) When possible the pump shall be so located and designed as to avoid the use of a pump pit. A pump pit, if used, shall be of watertight construction to avoid flooding.

(b) The location shall be such as to permit convenient access for the removal and repair of the pump, drop pipe and other accessories.

(c) The pump shall be suitably mounted to avoid objectionable vibration and noise, and to prevent damage to pumping equipment.

(d) The pump controls and/or accessories shall be protected from weather.

7:10-12.29 Pump controls

(a) The following controls are required on all pump installations:

1. Pressure switch;
2. Thermal overload switch;
3. Pressure relief valve on positive displacement pumps.

7:10-12.30 Pump down control

(a) When the capacity of the installed pump, expressed in gallons per minute, exceeds the safe yield of the well, one of the following pump down controls shall be installed, as applicable:

1. 30 Feet of tailpipe below a jet pump on deep well installations;
2. A vertical suction line no less than 30 feet in length on shallow well jet installation;
3. A low water level cut-off switch on all other pumps.

7:10-12.31 Need for treatment

(a) Bacteriological quality rules are:

1. A sample of raw water from every proposed water system covered by these standards shall be bacteriologically tested, and a copy of the analytical result shall be submitted to the local board of health having jurisdiction so that a determination of its acceptability can be made. Water which fails to meet the bacteriological requirements of the State primary drinking water regulations shall be adequately disinfected in accordance with section 33 of this subchapter.

2. All water derived from a spring or a surface source and utilized as the source of supply for a non-public or public non-community water system shall be adequately disinfected in accordance with section 33 of this subchapter.

(b) Physical and chemical quality rules are:

1. A sample of raw water from every proposed public non-community water system shall be treated for nitrates, iron, manganese, pH, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and fluoride. In addition, when the source of water is derived from a

surface supply, the administrative authority may require the water to be tested for selected organic constituents.

2. A sample of raw water from every proposed non-public water system shall be tested for nitrates, iron, manganese and pH as a minimum. Additional chemical determinations may be requested at the discretion of the administrative authority.

3. A copy of the analytical result shall be submitted to the local board of health having jurisdiction so that a determination of its acceptability can be made.

4. Based on the physical and chemical analyses required by paragraphs 1 and 2 of this subsection, the administrative authority may require appropriate treatment of the water.

(c) All water derived from a surface source shall be subjected to a filtration process acceptable to the administrative authority.

(d) All tests or analyses performed in accordance with the requirements of this subsection shall be done in a laboratory certified by the department.

7:10-12.32 Chemical handling and feeding

(a) General rules are:

1. Suitable means shall be provided to insure proper and continuous chemical dosage of the water being treated.

2. Variation in the accuracy of the feed rate shall not exceed five per cent, of the intended dosage.

3. Where applicable, feeders shall be located so as to prevent dust and fumes from entering other operating areas.

4. Chemical solutions shall not be introduced directly into any pipe or conduit under negative pressure or directly into a well.

5. The discharge of a chemical solution feeder shall be equipped with a suitable valve to prevent siphonage of the solution and the valve shall be located above the flood rim of the solution tank.

6. A no-flow switch shall be provided to prevent the feeding of such chemical solutions upon cessation of water flow.

(b) Solution tanks rules are as follows:

1. When applicable, solution tanks shall be provided with adequate agitation to keep the strength of the solution uniform throughout.

2. The pipes supplying water for the dissolving of chemicals or for make-up water shall be introduced via an air break or other approved method for preventing back-siphonage.

3. Chemical solution tanks shall be provided with suitable covers and shall be of sufficient capacity to provide at least one day's (24 hours) storage.

(c) Chemical feed lines shall be easily accessible for repair or cleaning; protected against damage and freezing; corrosion resistant; as short as possible; and be provided with adequate slop to permit draining.

(d) Where applicable, as determined by the administrative authority, such safety equipment as a shower, a Bureau of Mines approved respirator, rubber or neoprene gloves and apron, and goggles shall be provided.

7:10-12.33 Disinfection

(a) General rules are as follows.

1. Chlorination as a method of disinfection shall be acceptable for any water system.

2. Iodination and ultra-violet light as methods of disinfection may be acceptable for non-public water systems utilizing groundwater if approved by the administrative authority.

3. Storage facilities which are required as part of the water system may be utilized to provide the chlorine and iodine disinfection contact times, provided they are of the flow-through type.

(b) Chlorination rules are as follows.

1. Hypochlorite feeders of the positive displacement type will be acceptable for all water systems to which these standards apply. Gas chlorinators of the solution feed type may be utilized only with the specific approval of the administrative authority and are not recommended for smaller installations.

2. A minimum of 30 minutes contact time based on maximum pump capacity shall be provided.

3. The chlorination facilities shall be capable of producing a chlorine residual after the contact period as proof of disinfection. A chlorine residual test kit shall be provided to insure that proper dosage is being maintained.

4. Provision shall be made to protect the equipment from freezing.

5. Gas chlorinating devices shall be placed in above-grade separate rooms with outside entrance only and provided with suitable ventilation. An observation window to permit visual inspection without opening the door of the chlorine room shall be provided.

6. In the case of water derived from a well, operation of the chlorination facilities shall be synchronized with the operation of the well pump.

(c) Iodination rules are as follows.

1. Iodination shall be accomplished by passing a portion of the flow of water through a saturator containing elemental iodine crystals.

2. The height of iodine crystals in the saturator shall be maintained at a minimum of 10 inches to insure a saturated solution.

3. A minimum of 30 minutes contact time based on maximum pump capacity shall be provided.

4. Iodination facilities shall be capable of producing an iodine residual after the contact period as proof of disinfection. An iodine residual test kit to insure that the proper dosage is being maintained shall be provided.

5. It is recommended that when iodine is used as a disinfectant, persons drinking such water should discontinue using iodized salt.

(d) Ultra-violet light rules are as follows.

1. Ultra-violet tubes shall be jacketed so that the proper temperature of about 105 degrees Fahrenheit is maintained.

2. The jacket shall be of quartz or high-silica glass with similar optical characteristics.

3. The unit shall be designed to permit frequent mechanical cleaning of the water contact surface of the jacket without disassembly of the unit.

4. 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 units must be applied at all points throughout the disinfection chamber at a minimum dosage of 16,000 micro-watt 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 unit.

7. An accurately calibrated ultra-violet light intensity meter, properly 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 flow into the potable water system only when the minimum dosage specified above is applied. When power is not being supplied to the unit, the valve shall be in a closed (fail-safe) position which prevents the flow of water into the potable water system.

9. The operation of the ultra-violet light unit shall be synchronized with the operation of the well pump.

10. The unit shall not be installed in such a manner that it can be bypassed.

7:10-12.34 Chemical and physical treatment

(a) General rules are:

1. Treatment facilities shall be capable of producing a water meeting by appropriate standards.
2. Treatment facilities shall be of sufficient capacity to produce the daily volumes of water required by section 7 of this subchapter.
3. All filter shells, ion-exchange pressure tanks and chemical solution feed drums shall be constructed of corrosion resistant materials or be provided with noncorrosive liners.
4. Methods and types of water treatment not discussed in this subsection will be considered by the administrative authority on an individual basis.
5. Wastewater resulting from the backwashing or regeneration of filter media and/or ion exchange resin shall be disposed of in a manner acceptable to the Division of Water Resources of the Department.

(b) Water softening equipment shall conform to the standards established by the Water Quality Association (S-100-73 or latest revision) and shall bear the seal of the association.

(c) Corrosion control (pH adjustment) rules are as follows.

1. General: pH adjustment for corrosion control is recommended when the pH of the raw water is less than 6.0.
2. Methods of pH adjustment:
 - i. Neutralizing filters:
 - (1) Neutralizing filters consisting of a bed of graded limestone may be employed.
 - (2) Water softeners may be required downstream of the neutralizing filter if the filter adds excessive hardness to the water.
 - ii. Injection of alkaline materials:
 - (1) Suitable alkaline materials are limited to soda ash, lime, and caustic soda and shall be fed by means of a positive displacement pump. Due to safety considerations, the feeding of caustic soda is not recommended for single dwelling water supply systems.
 - (2) The feed pump shall be of sufficient capacity to adjust the pH to at least 7.5, and be wired for synchronous operation with the well pump.
 - (3) Suitable equipment including respirator, gloves, apron, shower and eye wash facilities shall be provided for the safety of persons handling these materials.

(d) Iron-manganese removal rules are as follows.

1. Water conditioning equipment used for iron manganese removal shall conform to the standards established by the Water Quality Association (S-100-73 or latest revision), and shall bear the seal of the foundation.
2. Iron-manganese removal facilities which include an open aeration process shall be so designed and constructed that all air which enters the oxidizing unit shall pass through a corrosion resistant screen of not less than 24 mesh in order to protect the water from dust and insects.

(e) Surface water treatment rules are as follows.

1. Sedimentation requirements are as follows.
 - i. Unless it can be demonstrated that a lesser time will be adequate, one hour detention time will be required prior to filtration.
 - ii. Sedimentation basins shall be provided with baffling to minimize short circuiting.
2. Filtration requirements are as follows.
 - i. Maximum permitted filter rate shall be five gpm per square foot of filter media.
 - ii. Minimum of 18 inches of filter media is required.

7:10-12.35 General requirements for finished water storage

- (a) Finished water storage shall be provided as an integral part of each water supply system.
- (b) The location, size and type of storage facility shall be such as to provide a minimum pressure of 20 p.s.i.g.
- (c) All storage facilities shall be designed to permit dewatering for cleaning and maintenance.
- (d) Each reservoir, standpipe, or elevated tank shall be provided with a suitable watertight roof or cover.
- (e) Each hydropneumatic storage tank shall be provided with an adequate pressure relief valve and air volume control, and shall have a rated working pressure in excess of the maximum system pressure.
- (f) All vents shall be protected with downfacing elbows or mushroom-type caps fitted with insect screens.
- (g) All protective coatings in contact with water shall be inert, non-toxic and shall not impart any taste, odor or color to the water.

(h) All reservoirs, tanks and appurtenances shall be disinfected in accordance with section 12 of this subchapter.

7:10-12.36 Required storage capacity

(a) Each single dwelling water supply system shall be provided with minimum water storage facilities in accordance with table 6.

TABLE 6

Installed Pump Capacity (gpm @ 40 p.s.i.g.)	Minimum Size, Hydropneumatic Tank (gallons)
Greater than 9	42
Less than 9, but greater than 6	82
Less than 6, but greater than 4	120
Less than 4	220

Note: The above table provides for approximately five minutes of storage at a peak demand rate of 12 gpm over an operational pressure range of 20 to 40 p.s.i.g., utilizing three-quarter inches service piping and standard sizes of hydropneumatic tanks.

(b) Each multiple dwelling water supply system shall be provided with minimum hydropneumatic storage facilities as calculated by applying the normal peak flow rate (Q) obtained from graph 1 and the minimum storage time (T) for each group of dwellings enumerated in table 7 to the following formula, except that in no case shall the storage provided be less than the absolute minimum listed in table 7.

1. Formula:

$$\text{Size of Hydropneumatic Tank (gallons)} = \frac{Q \times T \times (P + 14.7)}{P - 20} = (C \times T)$$

Where: Q = Normal peak flow rate (gpm) from graph 1.

T = Minimum storage time (minutes) from table 7.

P = Maximum operating pressure (p.s.i.g.)

C = Pump capacity (gpm) at maximum operating pressure.

Note: This formula is based on recommendations contained in "Environmental Engineering and Sanitation," Second Edition, by Joseph A. Salvato Jr. (John Wiley & Son 1972), and is also recommended in Publication EPA-430-9-73-003 of the Federal Environmental Protection Agency.

2. Example:

For 8 homes with a 50 gpm pump operating between 20 and 60 p.s.i.g.:

From table 7: T = 10; from graph 1: Q = 52

$$\text{Volume} = \frac{52 \times 10 \times (60 + 14.7)}{60 - 20} - (50 \times 10)$$

$$= \frac{520 \times 74.7}{40} - 500$$

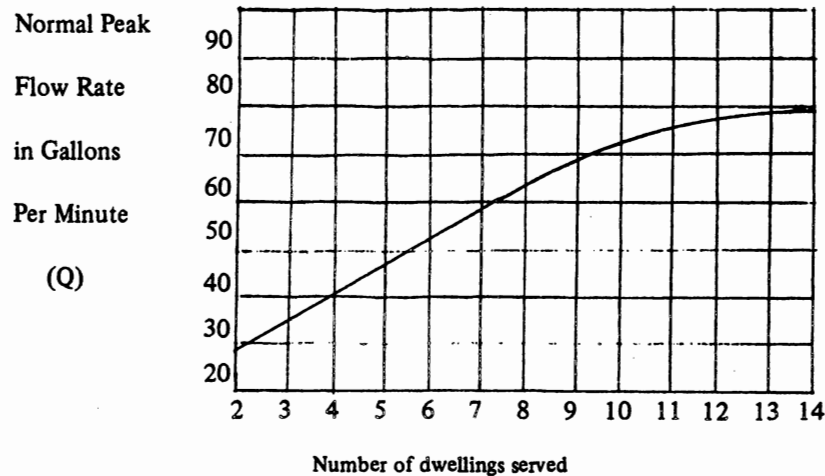
$$= 970 - 500$$

Required tank size = 470 gallon hydropneumatic tank (minimum)

TABLE 7

Number of Dwellings Served	Minimum Storage Time (T)	Absolute Minimum Tank Size
2- 5	7 minutes	120 gallons
6-10	10 minutes	315 gallons
11-14	15 minutes	500 gallons

GRAPH 1



Note: This graph is derived from the standards of the National Bureau of Standards, United States Department of Commerce, for Type B dwellings (that is, those containing one water closet, one lavatory, one bathtub and shower, one kitchen sink and one outside hose bib and laundry facilities). Larger peak demands can be expected for dwellings which contain substantially larger numbers of water fixtures.

(c) Minimum water storage capacity for types of non-public and public non-community water supply systems other than those serving family dwellings will be required by the administrative authority on an individual basis.

7:10-12.37 General requirements for distribution systems

(a) All service lines and distribution mains intended for year-round water service shall be provided with sufficient earth cover to prevent freezing (minimum 3.5 feet).

(b) All new service lines and distribution mains shall be adequately disinfected in accordance with the requirements of section 12 of subchapter 7 prior to being placed into service.

(c) So far as is practicable, distribution mains shall be laid in the loop system to eliminate deadends. Deadends, if unavoidable, shall be provided with a flushing hydrant or blowoff for flushing purposes. Each such flushing device shall be adequately protected against damage and contamination, shall extend at least 12 inches above grade, and shall be provided with an independent self-draining shut-off valve.

(d) Every service line shall be horizontally separated at least five feet from a sanitary sewer, 10 feet from a septic tank, distribution box, disposal field or seepage pit, and 25 feet from a cesspool, by undisturbed or compacted earth.

(e) Distribution mains shall generally be separated from sanitary sewers by a horizontal distance of 10 feet. If such

lateral separation is not possible, the bottom of the distribution main shall be at least 18 inches above the top of the sewer.

7:10-12.38 Capacity and size; service lines

(a) The minimum size of any service line shall be three-quarter inches nominal diameter.

(b) The design capacity of distribution mains and service lines shall be such as to provide a minimum pressure of 20 p.s.i.g.

(c) Any distribution main which serves a fire hydrant shall have a minimum diameter of six inches.

(d) The minimum diameter of all other distribution mains for residential usage shall be in accordance with table 8.

TABLE 8

Minimum Diameters of Distribution Mains for Residential Uses.

No. of Dwellings	Minimum Main Size
2	1 inch
3-5	1 ½ inches
6-9	2 inches
10-14	3 inches

Note: Main sizes specified are based on a flow of 13 gpm per realty improvement at eight feet per second, are derived from multiples of the area of ¾ inches line for a single service line, and are based on common pipe sizes.

(e) Minimum size distribution mains for types of non-public and public non-community water supply systems oth-

er than those serving family dwellings will be required by the administrative authority on an individual basis.

7:10-12.39 Water crossings

(a) Distribution mains which span a stream or water course or which are fastened to a bridge shall be of cast iron, ductile iron or steel, and shall be properly supported to maintain stability.

(b) Distribution mains which cross 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.

7:10-12.40 General requirements for certification

(a) Applications for certifications of new non-public and public non-community water supply systems or alterations thereto which include new or altered sources of supply, new or altered water treatment methods, or significant expansion shall be submitted in writing, and upon a formal application form when provided by the administrative authority.

(b) In the case of well supplies, the application shall include evidence that a well drilling permit or permits has been obtained from the Bureau of Geology, State Department of Environmental Protection.

(c) Evidence that a diversion permit has been obtained from the Bureau of Water Supply Planning and Management, State Department of Environmental Protection, shall be submitted in each case where ground water in excess of 100,000 gallons daily is to be diverted.

(d) Prior to preliminary subdivision approval in those instances where 50 or more realty improvements are involved, in addition to certification by the administrative authority, application shall be made to the department, in accordance with the requirements of section 43 of this subchapter for certification that the proposed water supply facilities comply with applicable State standards.

7:10-12.41 Certification of single dwelling water supply systems

(a) The following materials shall accompany the application for certification:

1. The statement indicating the reason, with sufficient justification, why the realty improvement is to be served with single dwelling water supply system in lieu of connection to public water supply system.

2. A sketch of the property in the case of a single realty improvement, or a plot plan in the case of a subdivision containing multiple realty improvements for which certification of single dwelling water supply systems is required, drawn to suitable scale and with sufficient detail to permit examination and comprehension of the proposed project. Locations of all wells, service lines, sewage disposal systems, and other potential sources of contamination within 150 feet of any proposed well shall be shown on the individual sketch of the property. In the case of plot plans the locations of municipal boundaries, roads, streams, sanitary sewers, storm water sewers and drainage channels, test wells, well fields, all existing and proposed water supply and sewage disposal facilities shall be shown, together with the locations of all service lines and potential sources of contamination within 150 feet to each proposed well. Topography by elevations, contours or other suitable methods shall be shown.

(c) A description of the proposed single dwelling water supply system or systems to include the following information:

1. Source of water supply:
 - i. If from surface water or a spring, the dependable yield, characteristics of the water quality in relation to its treatability, sources of potential contamination, and the proposed measures and methods of construction to insure adequate protection.
 - ii. If from a well or wells, data on the geological strata expected to be penetrated, proposed construction features of the well or wells according to region, anticipated yield and water quality, and sources of potential contamination within 150 feet of each proposed well.
2. Pumping equipment, including location, type, capacity and method of control for each unit.
3. Storage facilities, including location, type, capacity, and operational pressure range.
4. Analytical data (in the case of well supplies, obtained after completion of the well), on the bacteriological and chemical quality of the water.
5. Water treatment processes, if any, together with the nature of dosage of any chemical to be applied.
6. Treatment and disposal of sludge and filter backwash, if applicable.
7. Method proposed for the disinfection of all surfaces with which adequately protected water may come into contact, prior to the system being placed into operation.

7:10-12.42 Certification of non-public and public non-community water supply systems other than those serving single dwellings

(a) The following materials shall accompany the application for certification:

1. A statement indicating the reason, with sufficient justification, why such a water supply system is proposed in lieu of connection to a public community water supply system.

2. For non-public water supply systems other than those serving single dwellings, a plot plan drawn to suitable scale and with sufficient detail to permit examination and comprehension of the project. Locations of all wells, service lines, sewage disposal systems, and other potential sources of contamination within 150 feet of any proposed well shall be shown.

3. For public non-community water supply systems plans and specifications prepared by a professional engineer and bearing his engineer's seal and signature. Such plans shall be drawn to a suitable scale and with sufficient detail to permit examination and comprehension of the project. The locations of municipal boundaries, roads, streams, sanitary sewers, storm water sewers and drainage channels, test wells, well fields, all existing and proposed water supply and sewage disposal facilities shall be shown, together with the locations of all distribution mains, service lines, and potential sources of contamination within 150 feet of each proposed well. Topography by elevations, contours, or other suitable methods shall be shown.

4. Information on the number and types of realty improvements to be served, including anticipated number of persons to be supplied, anticipated water demands and the relationship of the proposed facilities to these factors.

5. Information on the size, type of pipe, location, depth and sanitary protection of the distribution mains including whether or not they are to be utilized for fire protection.

6. All the data required by N.J.A.C. 7:10-12.41(c)1-7.

7:10-12.43 State certification for 50 or more realty improvements

(a) The following information shall be submitted to the Division of Water Resources, New Jersey State Department of Environmental Protection, for review and certification prior to the granting of preliminary subdivision approval in those instances where 50 or more realty improvements are involved.

1. A plan of the proposed subdivision showing lots with their dimensions, contours of original grades, proposed elevation of the final grading shown at corner lots or any contemplated change of slope, drainage right of way and any contemplated diversion thereof affecting the proposed realty improvements, storm sewers, location and depth of all wells and existing water supplies within 500 feet of any realty improvement, and location and depth of proposed wells for water supply systems to serve the proposed realty improvements;

2. A description of the proposed water supply systems including location of all test wells drilled to investigate

water supply potentialities, location of all natural streams and storm water drainage channels on or abutting the subdivision and of any contemplated relocation of same, location when less than one-half mile from the highwater line along the coast and all salt water estuaries and elevation of maximum high water when available, type of well or source of water supply, estimated depth of wells, method of sealing, pumping equipment, storage facilities, and purification facilities if required;

3. Expected rate of construction of the realty improvements;

4. Estimated date of availability of a public water supply system if such is not to be provided initially;

5. Such additional information as may be required by the department after review of the data submitted.

(b) The plan of the subdivision to be submitted to the State Department of Environmental Protection for the certification of sewerage facilities may be used for the purpose of compliance with this subsection, in which case only a single submittal will be required.

SUBCHAPTER 13. WATER SUPPLY AND WASTE-WATER COLLECTION AND TREATMENT SYSTEMS: EXAMINING AND LICENSING OF OPERATORS

7:10-13.1 Scope and construction of rules

(a) This subchapter shall constitute the rules governing the eligibility, examining, and licensing of persons for licenses as operators of Industrial Wastewater Treatment Systems, Public Wastewater Collection Systems, Public Wastewater Treatment Systems, Public Water Treatment Systems and Public Water Distribution Systems.

(b) This subchapter shall be liberally construed to permit the Department to discharge its statutory functions.

(c) If any section, subsection, provision, clause, or portion of this subchapter is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these regulations shall not be affected thereby.

7:10-13.2 Definitions

The following words and terms when used in this subchapter shall have the following meaning unless the context clearly indicates otherwise.

"Act" means the Water Supply and Wastewater Operators Licensing Act, N.J.S.A. 58:11-64 et seq.

"Board" means the Board of Examiners established by N.J.A.C. 7:10-13.3.

“Bureau” means the Bureau of Collections and Licensing, CN 402, Trenton, New Jersey 08625.

“Commissioner” means the Commissioner of the Department of Environmental Protection of the State of New Jersey.

“Department” means the Department of Environmental Protection of the State of New Jersey.

“Licensed operator” means the licensee approved by the Department holding any local title, designation, or job description who is on-site at a system a significant amount of time, although not necessarily full time, and who has active involvement in and is responsible for the operation, and maintenance, and effectiveness of the system and who holds a license equal or superior to that required for the system.

“Licensee” means a person who possesses a valid license issued by the Department pursuant to the Act.

“Industrial Wastewater Treatment System” means any structure or structures by means of which industrial liquid waste or sludges are subjected to any treatment process requiring the issuance of an individual NJPDES permit regulated by the Department pursuant to the New Jersey Pollutant Discharge Elimination System Permit Program, N.J.A.C. 7:14A, under the authority of the Water Pollution Control Act N.J.S.A. 58:10A-1 et seq.

“Oil water separator” means an industrial wastewater treatment system designed for the removal of insoluble oils or floating grease by gravity means.

“Operating requirements” means provisions of permits or approvals, administrative orders, directives, or rules and regulations which the Department may issue or adopt to ensure the safe and efficient operation of systems, consistent with statutory authority.

“Owner” means any municipality, institution, authority, commission, corporation, person or other similar body who owns or controls a system.

“Public Wastewater Collection System” means a system which serves more than 250 people or conveys more than 25,000 gallons of wastewater (Pollution Control Act, N.J.S.A. 58:10A-1 et seq.) and which system consists of structures which, operating alone or with other structures, result in the collection and conveyance of wastewater from private, commercial, institutional or industrial sources, to public wastewater treatment plants for subsequent treatment, or a system which solely transmits treated effluent from a public wastewater treatment system for disposal.

“Public Wastewater Treatment System” means any structure or structures by means of which domestic, or combined domestic and industrial liquid wastes or sewage are subjected to any process in order to remove or so alter constituents as to render the wastes less offensive or dangerous to public health, safety, welfare, comfort, property or environment of the State or any inhabitants of the State before discharge of the resulting effluent either directly or indirectly into any waters of the State, and which is regulated by the Department pursuant to the authority of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq.

“Public Water Distribution System” means a system comprising structures which is a public community water system identified by a specific ID number pursuant to the Safe Drinking Water Act Regulations, N.J.A.C. 7:10, and which operating alone or with other structures, results in the derivation, conveyance (or transmission) or distribution of piped water for human consumption and domestic purposes.

“Public Water Treatment System” means any structure or structures delivering water into a public water distribution system as identified by a specific ID Number pursuant to the Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., and which subjects water, prior to use for potable purposes, to the addition or subtraction of a substance or substances in order to enhance the safeness, palatability, public health, purity, or aesthetic qualities; or reduce the corrosive or hazardous properties of the water use.

“Sedimentation unit” means any industrial wastewater treatment system at which wastewater is only physically, not chemically, treated to reduce suspended solids including a clarifier, settling tank, lagoon, basin or pond, detention basin or pond, or sedimentation basin or pond.

“System” means any Industrial Wastewater Treatment System, Public Wastewater Collection System, Public Wastewater Treatment System, Public Water Distribution System or Public Water Treatment System.

“Waters of the State” means the ocean and its estuaries, all springs, groundwater, streams or bodies of surface waters, whether natural or artificial, within the boundaries of this State or subject to its jurisdiction.

Amended by R.1989 d.170 effective March 20, 1989.

See: 20 N.J.R. 1141(b), 21 N.J.R. 750(c).

Definitions for “oil water separator” and “sedimentation unit” added.

7:10-13.3 Examining board

(a) A Board of Examiners is hereby established to advise and assist the Department in the preparation and administration of examinations conducted under the authority of the Act.

(b) The Board shall be comprised of certain engineering personnel of the Department, and actively engaged licensed operators having at least five years experience in the operation of a system in the State of New Jersey and possession of a current Class 4 license for one or more at the time of appointment. The members of the Board shall be appointed and may be reappointed by the Commissioner and shall:

1. Be appointed for a three year term and shall serve until the appointment of a successor;
2. Be comprised of three representatives from the water works field and three representatives from the wastewater field and three representatives from the Department's engineering personnel in the Division of Water Resources; and,
3. Be subject to removal at the discretion of the Commissioner.

(c) Five members of the Board shall constitute a quorum of the Board for conducting business.

(d) No compensation shall be paid for the services of the members of the Board but they shall be reimbursed for their necessary expenses incurred in performing the services herein prescribed.

(e) The Board shall keep minutes of its meetings and it shall transmit its recommendations through the Director, Division of Fiscal and Support Services to the Commissioner.

(f) The current members of the Board shall continue as members of the Board until the completion of their terms, when they may be reappointed.

7:10-13.4 Examinations

(a) Examinations for licenses to operate Systems shall be given at least twice annually and at such other times as the Department may deem necessary. They shall be prepared, conducted, and scored in accordance with the Department's standard operating procedures with the advice of the Board.

(b) The examinations may consist of written questions, or oral questions, or a combination thereof.

(c) The Board shall establish examination review procedures which are fair to the applicants and which preserve the integrity of the examinations.

7:10-13.5 Advisory committee on training

(a) An Advisory Committee on Water Supply and Wastewater Licensed Operator Training is hereby established to:

1. Advise the Department through the Board on such matters as are referred to the Committee by the Department or Board with respect to the instructional process leading to State licensing of system operators and for the further educational advancement of licensees;

2. Coordinate the activities of New Jersey educational institutions offering or proposing to offer appropriate coursework.

3. Establish and periodically update standardized course outlines for the educational training of the operators of water supply and wastewater facilities leading to State licenses and specifying a minimum number of classroom hours for each.

4. Periodically review available textbooks in the field of water supply, water treatment and wastewater treatment, and make recommendations for standard textbooks which should be used for approved courses.

5. Act as a clearing house on matters affecting water supply and wastewater licensee training in New Jersey.

(b) The Committee members shall be appointed and may be reappointed by the Commissioner for terms of three years and shall include, as a minimum:

1. One representative from the Division of Fiscal and Support Services, Bureau of Collection and Licensing;

2. One representative who is a Department employee from the Board;

3. Three representatives from the Division of Water Resources;

4. Two representatives from nomination lists submitted by the New Jersey Section American Water Works Association one of these representatives shall be a licensed operator, and one shall be a member of the Education Committee of the American Water Works Association;

5. Two representatives from nomination lists submitted by the New Jersey Water Pollution Control Association; one of these representatives shall be a licensed operator, and one shall be a member of the Education Committee of the Water Pollution Control Association;

6. Two representatives from nomination lists submitted by the Authorities Association of New Jersey; one of these representatives shall be from a water authority and one shall be from a wastewater authority.

7. One representative from a nomination list submitted by the New Jersey Chamber of Commerce;

8. One representative from a nomination list submitted by the New Jersey Business and Industry Council;

9. One representative per institution from a list submitted by each New Jersey Educational Institution currently conducting courses in water supply or wastewater operations or which has conducted an appropriate course during the preceding academic year.

(c) If a vacancy should occur on the committee during the term of a member, the Commissioner may fill the

vacancy by appointing a qualified person for the time remaining in the term.

(d) The Advisory Committee shall meet at least twice each year.

1. Minutes shall be kept.

2. A copy of all recommendations and minutes shall be sent to each member, the Chairman of the Board and the Director of the Division of Water Resources.

(e) Administrative support for the Advisory Committee shall be provided by the Division of Water Resources.

7:10-13.6 Applications

(a) Applications for licenses shall be made on forms to be furnished by the Department and shall be filed with the Department on or before the prestamped closing date on the application form.

1. All applications shall be completed to the satisfaction of the Department and shall be accompanied by documentary evidence supporting education and experience, and the nonrefundable application fee.

2. Applicants shall be advised at least two weeks in advance regarding admission to examinations.

(b) Any applicant who submits false information when applying for a license may be disqualified from taking the examination or receiving the license. In addition, any licensee whose eligibility for a license was based on the submission of false information is subject to having that license suspended or revoked by the Department.

7:10-13.7 Examination results

An applicant who passes the examination and pays the appropriate license fee shall be issued the license of the classification for which the applicant was examined.

7:10-13.8 Fees

(a) The fee schedule is based upon the approximate cost to the Department to process the action requiring the fee. All fees submitted to the Department are nonrefundable. The following fees must be received by the Department before any action shall be taken on the matter requiring the fee:

1. Application Fee	\$35.00
2. Initial License Fee	\$25.00
3. Annual License Fee	\$20.00
4. Late Renewal Fee	\$10.00

7:10-13.9 License renewal requirements

(a) Each license shall be valid from its issue date until the following October 1.

(b) Each license holder shall renew his license by submitting a complete renewal application and the nonrefundable annual license fee to the Bureau, for a new license prior to September 30, of each year.

(c) A licensee who fails to renew his license within one year following the renewal date of the license, may not receive a new license until he successfully passes another qualifying examination.

7:10-13.10 Licensed operator required, penalties

(a) Every owner of a system shall employ a licensed operator holding the license prescribed by the Department for that classification of system. This licensed operator shall be in charge of the operation of the system.

1. If a system is reclassified the licensed operator of the reclassified system may continue as the licensed operator of that system, regardless of the new classification of that system.

(b) Any time the licensed operator is unavailable to cover the system for which he is the licensed operator, the owner shall obtain the services of a licensee holding a license not more than one class lower than the classification required for the operation of the system to cover the system during the unavailability of the licensed operator.

(c) Each class 3 treatment system and class 4 treatment system shall have the appropriate full-time licensed operator. In addition, class 4 treatment systems should have a licensee possessing any valid treatment license within the appropriate system classification, physically present at the treatment system during that portion of each 24 hour period when the licensed operator is not present.

(d) Those licensees desiring to be designated the licensed operator for more than one system shall apply for permission from the Department. If the Department grants permission it shall specify the time period of the permission and the minimum number of hours the licensed operator shall spend at each system.

1. The Department reserves the right to limit the number of systems a licensed operator may operate.

2. The licensed operator shall designate in his application for permission the person at the system to contact when the licensed operator is unavailable to the system.

(e) Licensed operators shall notify the department's Bureau of Collections and Licensing at least two weeks prior to changing their positions or employment.

(f) The owner of a system employing a new licensed operator shall notify, in writing, the Bureau of the name of the new licensed operator within two weeks after the licensed operator begins his employment.

(g) No person shall operate a system in violation of the provisions of the Act, this subchapter or any other operating requirements.

Amended by R.1989 d.170 effective March 20, 1989.
See: 20 N.J.R. 1141(b), 21 N.J.R. 750(c).

(c)1. Deleted reference to two year time frame since time period passed.

7:10-13.11 Reciprocity with other states

(a) The Department may issue licenses to persons meeting the requirements of N.J.S.A. 58:11-69.

(b) Any person meeting the requirements of N.J.S.A. 58:11-69 may apply to the Department for a license by filing a completed application form and the nonrefundable application fee with the Department.

(c) The Board shall evaluate the person's application and if it meets the criteria set forth in (a) above, the Department shall, upon receipt of the nonrefundable initial license fee, issue a license to the person.

7:10-13.12 Records and reports

Licensed operators shall submit to the Department, as may be required, reports pertaining to the operation of their system.

7:10-13.13 Conversion of licenses in effect on the effective date of these rules

(a) On the effective date of this subchapter the present public wastewater treatment system licenses, public water treatment system licenses, and the public water distribution system licenses shall be converted as follows:

1. The 1 level licenses shall become Class 4 licenses;
2. The 2 level licenses shall become Class 3 licenses; and,
3. The 3 level licenses shall become Class 2 licenses.

(b) Each holder of a S-IN license shall be granted a NN license which will permit the licensee to remain the licensed operator of the system at which he is employed on the effective date of this subchapter so long as he meets all requirements of this subchapter except the requirements of N.J.A.C. 7:10-13.15. However the NN license may not be used to meet the licensed operator requirements for any other system.

(c) The department shall begin accepting applications for the new industrial wastewater treatment system licenses on January 1, 1985. The closing date for applications to take the first set of examinations for the new industrial wastewater system license shall be February 28, 1985.

1. The department shall continue to accept applications for examination for the NN license until September 30, 1984.

(d) Any person eligible to apply for a N1 license, pursuant to N.J.A.C. 7:10-13.15(c), who is employed by an industrial wastewater treatment system consisting only of a gravity oil water separator or sedimentation unit may apply, pursuant to N.J.A.C. 7:10-13.6, to take an examination for a NS license instead of a N1 license.

(e) Any person who successfully passes the examination for a NS license may only become the licensed operator at a Class 1 industrial wastewater treatment system consisting only of a gravity oil-water separator or sedimentation unit.

(f) Any person operating a public wastewater collection system on the effective date of this subchapter shall be granted the collection system license required to operate that system if the person:

1. Submits a complete application and nonrefundable application fee to the Bureau within six months after the effective date of this subchapter. Said application shall include a notarized statement by the owner of the system that the applicant is the operator of the existing public wastewater collection system;
2. Meets the education and experience requirements, excluding the requirement for a license, set forth in N.J.A.C. 7:10-13.15(b).
3. Pays the nonrefundable initial license fee if notified he is eligible for the license.

(g) Any person employed at a public wastewater collection system on the effective date of this subchapter and who meets the education and experience requirements, excluding the requirement for a license, set forth in N.J.A.C. 7:10-13.15(b), shall be granted a license equal to the license required to operate the collection system where he is employed, if the person:

1. Submits a complete application and nonrefundable application fee to the Bureau within six months after the effective date of this subchapter. Said application shall include a notarized statement by the owner of the system substantiating the applicant's experience.
2. Pays the nonrefundable initial license fee if notified he is eligible for the license.

(h) Any person operating a public wastewater collection system on the effective date of this subchapter who does not meet the requirements of N.J.A.C. 7:10-13.15, shall be issued a CN license restricted to that system, which license shall permit him to continue to operate that system if the person:

1. Submits a complete application and the nonrefundable application fee to the Bureau within six months after the effective date of this subchapter. Said application shall include a notarized statement by the owner of the system that the applicant is the operator of the existing public wastewater collection system.

2. Pays the nonrefundable initial license fee if notified he is eligible for the license.

(i) Any person possessing a valid public wastewater treatment system license on the effective date of this subchapter (July 2, 1984) may obtain a public wastewater collection system license of the same class as his public wastewater treatment system license, if he submits a complete application and the nonrefundable application fee to the Bureau within six months after the effective date of this subchapter (July 2, 1984).

(j) Owners of public wastewater collection systems shall obtain a licensed operator or, if eligible, a restricted licensed operator (CN) by October 1, 1985.

Amended by R.1989 d.170 effective March 20, 1989.
See: 20 N.J.R. 1141(b), 21 N.J.R. 750(c).

(c) deleted, (d) recodified to (c), new (d) and (e) added delineating applicants for NS license exam; (e)-(i) recodified as (f)-(j).

7:10-13.14 System classification

(a) On the effective date of this subchapter all public wastewater treatment systems and public water treatment systems shall be classified into one of the four classes established in Table I. Each public wastewater treatment system's classification shall be based upon the number of points it receives in accordance with Table II. Each public water treatment system's classification shall be based upon the number of points it receives in accordance with Table III.

1. Table I: Classification of Public Wastewater Treatment System (S) and Public Water Treatment System (T)

FACILITY-CLASS	S1 or T1	S2 or T2	S3 or T3	S4 or T4
RANGE OF POINTS	30 and Less	31-55	56-75	76 & greater

2. Table II: Point System to be used in conjunction with Table I for Classifying a Public Wastewater Treatment System. The department shall assign points to the system for every item that applies. The department shall then total the points assigned and place the system in the classification for that amount of points set forth in Table I above.

Item	Points
Design flow	2 pt. per MGD or part thereof, Max. 20 Points
Effluent Discharge	
Surface Water discharge	2
Land disposal—evaporation	2
Subsurface disposal	4
Effluent used in direct recycle and reuse system	6
Variation in Raw Wastes (slight to extreme)	
Points will be awarded in accordance with Table IIa	0-10
Pretreatment	
Screening, comminution	3

Item	Points
Grit removal	3
Plant pumping of main flow	3
Equalization	3
Primary Treatment	
Primary clarifiers	5
Combined sedimentation/digestion	5
Chemical addition (except chlorination, enzymes, etc)	4
Secondary Treatment	
Trickling filter or rotating biological contactor w/secondary clarifiers	10
Activated sludge w/secondary clarifiers (including extended aeration and oxidation ditches)	20
Stabilization ponds without aeration	6
Aerated lagoon	10
Advanced Waste Treatment	
Polishing Pond	4
Chemical/physical—without secondary	18
Chemical/physical—following secondary	12
Biological or chemical/biological	14
Ion exchange	12
Reverse osmosis, electro dialysis	16
Chemical recovery, carbon regeneration	6
San filters	5
Solids Handling	
Thickening	6
Anaerobic digestion	12
Aerobic digestion	8
Evaporation sludge drying	2
Mechanical dewatering	10
Solids reduction (incineration, wet oxidation)	14
Composting	5
Disinfection	
Chlorination or comparable treatment	6
On-site generation of disinfectant	6
TOTAL †	

† If unique treatment plant conditions exist, the Department may adjust the facility classification.

i. Table IIa: to be used with the "Variations in Raw Wastes" item in Table II. The system shall be awarded 0 through 10 points based on the following:

The key concept is frequency and/or intensity of deviation or excessive variation from normal or typical fluctuations; such deviation can be in terms of strength, toxicity, shock loads, Inflow/Infiltration etc. Suggested point values are:

Variations do not exceed those normally or typically expected. * ws0

Recurring deviations or excessive variations of 100 to 200 percent in strength and/or flow. * ws 3

Recurring deviations or excessive variations of more than 200 percent in strength and/or flow. * ws 6

Raw wastes subject to toxic waste discharges which affect plant performance. * ws 10

3. Table III: Point System to be used in Conjunction with Table I for classifying Public Water Treatment Systems. The department shall assign points to the system for each item that applies. The department shall then total the points assigned and place the system in the classifications for that amount of points set forth in Table I above.

Item	Points
Size:	
Maximum population served, (Max 10 pts)	1 point per 10,000 or part thereof,
Peak month's production (average day) (Max 10 pts)	1 point per MGD or part thereof,
Water supply source:	
Ground water	6
Surface water	22
Treatment:	
Iron/manganese removal employing oxida- tion-sedimentation	10
Ion exchange	10
Chemical precipitation softening	20
Coagulation-flocculation-sedimentation	15
Filtration	10
pH adjustment and/or corrosion control	8
Taste and odor control (carbon or oxidants)	8
Fluoridation	8
Disinfection	8
On site generation of disinfectant	5
Reverse osmosis, electrodialysis, etc	15
In plant treatment of plant sludge including recycling but excluding lagooning	6
TOTAL†	

†If unique treatment plant conditions exist, the department may adjust the facility classification.

(b) Public wastewater collection systems (C) and public water distribution systems (W) shall be classified into one of the four classes as determined by the criteria found in Table IV:

1. Table IV: Public wastewater collection systems (C) and public water distribution systems (W) shall be classified in accordance with the population served or the population equivalent as follows.

Facility-Class	Population served or Population Equivalent ¹
C4 or W4	50,001 or more people
C3 or W3	15,001 to 50,000 people
C2 or W2	1,501 to 15,000 people
C1	251 to 1,500 people
W1	101 or more service connections and less than 1,501 people

i. Population equivalent shall only be used to classify public wastewater collection systems and means the number of individuals who would normally be expected to generate a given flow or quantity of pollutants, based either on 100 gallons per person per day or 0.17 lbs. BOD or Suspended Solids per person per day.

(c) On July 2, 1984 all industrial wastewater treatment systems as defined herein including pretreatment plants

shall be classified into one of the four classes established in Table V. Each industrial wastewater treatment system's classification shall be based upon the number of points it receives in accordance with Table VI.

1. Table V: Classification of Industrial Wastewater Treatment Systems (N)

FACILITY—CLASS RANGE OF POINTS	N1 6 to 19	N2 20 to 49	N3 50 to 69	N4 70 or more
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2. Table VI: Point system to be used in conjunction with Table V for classifying an industrial wastewater treatment system. The department shall assign points to the system for every item that applies. The department shall then total the points assigned and place the system in the classification for that amount of points set forth in Table V above.

Classification Consideration	Point Rating
A. Toxicity Group	1
1. I	1
2. II	5
3. III	10
4. IV	15
5. V	20
6. VI	25
B. Receiving Water	
1. Surface Water—FW	5
2. Surface Water—TW	3
3. Surface Water—CW	2
4. Ground Water	5
C. Hydraulic Load	
1. Less than 0.1 MGD	2
2. 0.1–1.0 MGD	4
3. 1.0–10.0 MGD	6
4. Greater than 10.0 MGD	10
D. Primary	
1. pH Adjustment	1
2. Equalization	1
3. Oil Separator	3
4. Dissolved Air Flotation	3
5. Chemical Coagulation/ Flocculation	5
6. Sedimentation/Clarification	3
7. Chemical Addition	2
8. Filtration	5
9. Disinfection	2
10. Air Stripping	5
E. Secondary	
1. Activated Sludge	15
2. Bio-Filtration	10
3. Stabilization Pond	5
4. Disinfection	2
5. Spray Irrigation	10
F. Advanced	
1. Ammonia Removal	10
2. Nutrient Removal	10
3. Filtration	5
4. Carbon Absorption	10
5. Ion Exchange	10
6. Post Aeration	2
G. Sludge Handling/Disposal	
1. Digestion	5
2. Sludge Conditioning	2
3. Mechanical Dewatering	4
4. Drying Beds or Lagoons	2

Classification Consideration	Point Rating
5. Thickening or DAF	3
6. On-Site Landfill	2
7. Composting	7
8. Incineration	10
GRAND TOTAL†	<hr/>

† If unique treatment plant conditions exist, the department may adjust the facility classification.

7:10-13.15 Criteria needed to take the examination for each license

(a) Persons applying to take an examination for any license except an industrial wastewater treatment system license shall meet the following requirements and possess the minimum education and experience requirements for the license applied for found in Table VII in (b) below.

1. Persons applying to take any examination and holding no degree higher than a high school diploma shall have successfully completed an introductory course approved by the department in the subject matter pertaining to the license being sought, prior to applying to take the examination.

2. Any person applying to take an examination for a class 2, 3 or 4 license shall complete an advanced course approved by the department in the subject matter pertaining to the license being sought, prior to applying to take the examination.

3. Either or both of the courses required above may be waived if the applicant submits satisfactory proof of equivalent training to the department.

i. Such proof of equivalent training shall consist of transcripts and descriptions of relevant courses, including textbooks used in the courses, taken by the applicant.

(b) Table VII: Minimum requirements applicants for licenses, except industrial wastewater treatment system licenses shall meet before being admitted to take an examination for each classification.

Personnel Classification	Education	Operating Experience Years ³	Direct Responsible Charge ⁴ Experience Years	Total Experience Years
Classification 1	High school Diploma or Equivalency Certificate,	1	0	1
	Associate Degree ¹	1	0	1
	Bachelor Degree Category. ²	1	0	1
Classification 2	High school Diploma or Equivalency Certificate,	3	0	3
	Associate Degree ¹	2	0	2
	Bachelor Degree Category. ²	1.5	0	1.5
Classification 3	High school Diploma or Equivalency Certificate,	3 plus	3	6
	Associate Degree ¹	2 plus	2	4
	Bachelor Degree Category. ²	1.5 plus	1.5	3
Classification 4	High school Diploma or Equivalency Certificate,	6 plus	4	10
	Associate Degree ¹	4 plus	3	7
	Bachelor Degree Category. ²	3 plus	2	5

1. "Associate Degree" means successful completion of two years of formal college education resulting in an engineering or relevant science degree or post secondary vocational

program acceptable to the department, or a college degree in a field that does not meet the requirements of the Bachelor Degree category.
 2. "Bachelor Degree Category" means four years of formal college education resulting in an engineering or a related science degree acceptable to the department.
 3. "Operating Experience" means the full time or equivalent time spent in the satisfactory performance of significant operational duties at a system which is acceptable to the Board.
 4. "Direct Responsible Charge Experience" means active, daily, on-site supervision, including operation and maintenance responsibilities in a system with a classification no less than one classification lower than the license sought. This experience must be gained while in possession of a license no less than one grade lower than the license sought.

(c) Persons applying to take an examination for an industrial wastewater treatment system license shall meet the following requirements and possess the minimum education and experience requirements for the license applied for, found in Table VIII in (d) below.

1. Persons applying to take any industrial wastewater treatment system license examination shall have successfully completed an industrial waste course approved by the department prior to applying to take the examination. The course requirement may be waived if the applicant submits satisfactory proof of equivalent training to the department.

i. Such proof of equivalent training shall consist of transcripts and descriptions of relevant courses, including textbooks used in courses, taken by the applicant.

(d) Table VIII: Minimum requirements applicants for industrial wastewater treatment system licenses shall meet before being admitted to take an examination for each classification.

Personnel Classification	Education	Operating Experience Years
Classification 1	High school Diploma or Equivalency Certificate,	1
	Associate Degree ¹	1
	Bachelor Degree Category. ²	1
Classification 2	High school Diploma or Equivalency Certificate,	3
	Associate Degree ¹	2
	Bachelor Degree Category. ²	1.5
Classification 3	High school Diploma or Equivalency Certificate,	6
	Associate Degree ¹	4
	Bachelor Degree Category. ²	3
Classification 4	High school Diploma or Equivalency Certificate,	10
	Associate Degree ¹	7
	Bachelor Degree Category. ²	5

1. "Associate Degree" means successful completion of two years of formal college education resulting in an engineering or relevant science degree or post secondary vocational program acceptable to the Department, or a college degree in a field that does not meet the requirements of the Bachelor Degree category.

2. "Bachelor Degree Category" means four years of formal college education resulting in an engineering or a related science degree acceptable to the Department.

3. "Operating Experience" means the full time or equivalent time spent in the satisfactory performance of significant operational duties at a system which is acceptable to the Board. Manufacturing and process experience may be acceptable for operating experience.

R.1984 d.350, eff. August 20, 1984.

See: 16 N.J.R. 1423(a), 16 N.J.R. 2268(b).

SUBCHAPTER 14. INTERIM SAFE DRINKING WATER ACT TESTING SCHEDULE FOR HAZARDOUS CONTAMINANTS BY PUBLIC COMMUNITY WATER SYSTEMS

7:10-14.1 Authority

These rules are promulgated pursuant to the authority of the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq. (P.L. 1977, c.224), as amended and supplemented by P.L. 1983, c.443, commonly referred to as "A-280".

7:10-14.2 Purpose of rules

(a) These rules implement the statutory requirement of N.J.S.A. 58:12A-12 (Section 1 of P.L. 1983, c.443) that the Commissioner establish an initial and periodic testing schedule for the owner or operator of each public community water system required by the Act to undertake the initial and periodic testing of the water provided to customers by the water system in order to determine the presence of hazardous contaminants identified pursuant to N.J.S.A. 58:12A-13(a) (Section 2(a) of P.L. 1983, c.443) and N.J.A.C. 7:10-14.

(b) After receiving recommendations of the Drinking Water Quality Institute, the Department shall amend this subchapter to establish an initial and periodic testing schedule for the owner or operator of each public community water system required by the Act to undertake the initial and periodic testing of the water provided to customers by the water system in order to determine the presence of hazardous contaminants identified pursuant to N.J.S.A. 58:12A-13(b) (Section 2(b) of P.L. 1983, c.443) and N.J.A.C. 7:10-14.

7:10-14.3 Definitions

For the purpose of this subchapter, the following definitions in addition to those found in N.J.A.C. 7:10-1.3 are applicable.

“Act” means the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq. (P.L. 1977, c.224), as amended and supplemented by P.L. 1983, c.443.

“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 individual hazardous contaminants on the 2(a) List and 2(b) List.

“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. (See also N.J.A.C. 7:10-1.3.)

“Institute” means the Drinking Water Quality Institute established pursuant to N.J.S.A. 58:12A-20 (Section 10 of P.L. 1983, c.443).

“Total Bulk Purchase Water” means water supply purchased for resale to consumers by any public community water system from another water system due to the fact that said public community water system does not have any independent source of water.

“2(a) List” means the list of organic compounds established in N.J.S.A. 58:12A-13(a) (Section 2(a) of P.L. 1983, c.443).

“2(b) List” means the list of pesticides and related compounds, metals, base/neutral extractable organic compounds

and acid extractable organic compounds to be developed by the Commissioner, after consideration of the recommendations of the Institute, required pursuant to N.J.S.A. 58:12A-13(b) (Section 2(b) of P.L. 1983, c.443).

“Water Treatment Plant” means any structure delivering water into a public water distribution system and which subjects water, prior to use for potable purposes, to the addition or subtraction of a substance or substances in order to enhance the safeness, palatability, public health, purity, or aesthetic qualities; or reduce the corrosive or hazardous properties of the water used.

7:10-14.4 Program information

Any questions concerning this subchapter should be addressed to the Bureau of Potable Water, Division of Water Resources, New Jersey Department of Environmental Protection, CN-029, 1474 Prospect Street, Trenton, New Jersey 08625, (609) 292-5550.

7:10-14.5 Severability

If any section, subsection, provision, clause or portion of this subchapter is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this subchapter shall not be affected thereby.

7:10-14.6 Initial testing requirements for 2(a) List

(a) All public community water systems shall by January 9, 1985 conduct initial tests, pursuant to this subchapter, of the water provided to customers by the water system in order to determine the presence of hazardous contaminants on the 2(a) List.

(b) The initial tests required by this section shall be analyzed from samples collected during periods of representative water supply demand by a certified laboratory that is certified by the Department for the analysis of those specific parameters.

(c) The samples for the initial tests conducted pursuant to this section shall be obtained from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

1. All public community water systems shall provide along with all initial test results the following information on forms designed by and available from the Department:

i. A written description detailing the exact sampling locations in the distribution system selected for the initial tests conducted pursuant to this section; and

ii. All public community water systems shall submit, upon the Department's request, any maps indicating in proper scale the exact sampling locations selected for the initial tests conducted pursuant to this section.

2. After review by the Department of information submitted pursuant to (c)1 above and any other relevant information, the Department may require additional sampling at other representative sampling locations determined by the Department to be more appropriate for the purposes of the Act and this subchapter.

i. A public community water system shall revise and submit to the Department in writing the information required pursuant to (c)1 above to reflect the representative sampling locations approved by the Department pursuant to (c)2 above.

(d) All sampling shall be conducted pursuant to guidance available from the Department.

(e) For the purposes of the initial testing required by this section, the 2(a) List shall include only the following hazardous contaminants:

1. Trichloroethylene
2. Tetrachloroethylene
3. Carbon Tetrachloride
4. 1,1,1,-Trichloroethane
5. 1,2,-Dichloroethane
6. Vinyl Chloride
7. Methylene Chloride
8. Benzene
9. Chlorobenzene
10. Dichlorobenzene (s)
11. Trichlorobenzene (s)
12. 1,1,-Dichloroethylene
13. Trans-1,2,-Dichloroethylene
14. Polychlorinated Biphenyls (PCBs)
15. Chlordane
16. Xylenes

(f) All public community water systems shall complete the initial testing for the remaining 2(a) List hazardous contaminants, listed below, no later than six months after written notification by the Department of promulgation of appropriate interim test methodologies, pursuant to the Regulations Governing Laboratory Certification and Standards of Performance, N.J.A.C. 7:18, for each individual remaining 2(a) List hazardous contaminant listed below:

1. cis-1,2-dichloroethylene
2. ethylene glycol
3. kerosene
4. formaldehyde

5. n-hexane
6. methyl ethyl ketone

7:10-14.7 Periodic testing requirements for 2(a) List

(a) Public community water systems who obtain total bulk purchase water from other water supply sources shall, after the initial testing required by N.J.A.C. 7:10-14.6, conduct at a minimum periodic tests of the water provided to customers by the system in order to determine the presence of hazardous contaminants on the 2(a) List as follows:

1. One test every three years (by the end of January of the third year) for public community water systems serving less than 5,000 residents from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

2. One test every year (by the end of January of every year) for public community water systems serving between 5,001 and 50,001 residents from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

3. Two tests every year (by the end of June and the end of December of every year) for public community water systems serving over 50,000 residents from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

(b) Public community water systems with their own source of water supply shall, after the initial testing required by N.J.A.C. 7:10-14.6, conduct at a minimum periodic tests of the water provided to customers by the system in order to determine the presence of hazardous contaminants on the 2(a) List as follows:

1. Two tests every year (by the end of June and the end of December of every year) for public community water systems serving less than 10,000 residents from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

2. Two tests every year (by the end of June and the end of December of every year) for public community water systems serving over 10,001 residents consisting of one sample per water treatment plant serving the distribution system.

i. For the purpose of this subsection, the number of samples required to be taken by the water system shall be based on the number of treatment plants used by the water system, except that multiple treatment plants or wells using raw water from the same source of water or aquifer may, after written approval from the Department, be considered one treatment plant for determining the number of samples.

(c) The periodic tests required by this section shall be conducted during periods of representative water supply demand by a certified laboratory.

(d) The samples for the periodic tests conducted pursuant to this section shall be obtained from a representative location in the distribution system, taking into account number of persons served, different sources of water and different treatment methods employed.

1. All public community water systems shall provide along with all periodic test results the following information on forms designed by and available from the Department:

i. A written description detailing the exact sampling locations in the distribution system selected for the periodic test conducted pursuant to this section; and

ii. All public community water systems shall submit, upon the Department's request, any maps indicating in proper scale the exact sampling locations selected for the periodic tests conducted pursuant to this section.

2. After review by the Department of information submitted pursuant to (d)1 above and any other relevant information, the Department may require additional sampling at other representative sampling locations determined by the Department to be more appropriate for the purpose of the Act and this subchapter.

i. A public community water system shall revise and submit to the Department in writing the information required pursuant to N.J.A.C. 7:10-14.7(d)1 to reflect the representative sampling locations approved by the Department pursuant to (d)2 above.

(e) All sampling shall be conducted pursuant to guidance available from the Department.

As amended, R.1984 d.582, eff. December 17, 1984.
See: 16 N.J.R. 2396(a), 16 N.J.R. 3431(a).

(b) was adopted with amendments.

7:10-14.8 Identification of 2(b) List

(Reserved)

7:10-14.9 Initial testing requirements for 2(b) List

(Reserved)

7:10-14.10 Periodic testing requirements for 2(b) List

(Reserved)

7:10-14.11 Modification of periodic testing frequency by Commissioner

(a) After the initial testing required by N.J.A.C. 7:10-14.6, the Commissioner may determine on a case-by-case basis that greater or lesser frequency of periodic testing than required by this subchapter or testing at other more appropriate locations for an individual public community

water system would be necessary or sufficient to ensure the public health and safety.

1. The Department on its own initiative may determine that a greater or lesser frequency of periodic testing than required by this subchapter or testing at other more appropriate locations for an individual public community water system shall be implemented for said public community water system.

2. An individual public community water system may submit all appropriate documentation, evidence and other proofs that they deem justify a greater or lesser frequency of periodic testing than required pursuant to this subchapter or testing at other more appropriate locations for their public community water system.

(b) Any determination by the Commissioner to allow for a greater or lesser frequency of periodic testing required by this subchapter or testing at other more appropriate locations shall be communicated to the affected public community water system in a registered or certified letter detailing the new testing schedule for their public community water system.

(c) Any modification of the periodic testing frequency by the Commissioner pursuant to this section shall be communicated to the affected water users by the affected public community water system by at least one of the following methods:

1. Inclusion of written notice in the first set of water bills of the system issued after said modification and in any event by written notice within three months;

2. Publication of notice in a newspaper or newspapers with general circulation of the area served by the public community water system on not less than three consecutive days within thirty days of notice of said modification; or

3. Other public notification procedures proposed by the public community water system and approved by the Department in writing.

i. All public notification prepared pursuant to subsection (c) herein shall include, but not be limited to, the following information:

(1) Name of affected public community water system;

(2) Number of residents served and source of water supply;

(3) Previous periodic testing frequency;

(4) Approved modification of periodic testing frequency; and

(5) Brief explanation of justification for modification.

7:10-14.12 Analytical requirements

(a) All initial or periodic tests to determine the presence of hazardous contaminants required by this subchapter shall be conducted at a certified laboratory.

(b) The Department shall not accept initial or periodic test results for any hazardous contaminants on the 2(a) List and 2(b) List from laboratories not 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 the appropriate hazardous contaminants on the 2(a) List and 2(b) List.

7:10-14.13 Reporting requirements

(a) All public community water systems shall report to the Department the results of any test required pursuant to this subchapter within the first ten days of the month following the month in which any test, measurement or analysis is made pursuant to these subchapters.

1. A certified laboratory conducting tests for a public community water system pursuant to this subchapter may, upon prior written approval by the Department, submit such test results to the Department on behalf of a public community water system; provided that the public community water system agrees in writing to be bound by any test results submitted by such certified laboratory.

(b) All test results shall be submitted on forms designed by and available from the Department at the following address:

New Jersey Department of Environmental Protection
 Division of Water Resources
 Bureau of Potable Water
 CN-029
 Trenton, New Jersey 08625
 Attention: N.J.A.C. 7:10-14
 Test Results

(c) The Department may conduct spot checks to assure compliance with the Act and to verify the accuracy and integrity of any test results submitted pursuant to this subchapter.

7:10-14.14 Recordkeeping

(a) Any owner or operator of a public community water system subject to the provisions of this subchapter shall retain on its premises or at a convenient location near its premises records of all initial and periodic test results and other relevant information prepared pursuant to this subchapter for not less than 10 years.

(b) Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

1. The date, place, and time of sampling and the name of the person who collected the sample;
2. Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample;
3. Date of analysis;
4. Laboratory and person responsible for performing analysis;
5. The analytical technique/method used;
6. Chain-of-custody information concerning handling of the sample; and
7. The results of the analysis.

7:10-14.15 Violations and penalty provisions

(a) If any person violates any provision of the Act, or any rule, regulation or order promulgated or issued pursuant to the provisions of the Act the Department may invoke the penalty provisions of N.J.S.A. 58:12A-10 (Section 17 of P.L. 1983, c.443), including, but not limited to the following:

1. The Department may institute a civil action in a court of competent jurisdiction for injunctive or any other appropriate relief to prohibit and prevent such violation or violations and the said court may proceed in the action in a summary manner;
2. Any person who violates the provisions of the Act, or any rule, regulation or order promulgated pursuant to the Act shall be liable to a civil administrative penalty of not more than \$5,000.00 for the first offense, not less than \$5,000.00 nor more than \$10,000.00 for the second offense, and up to \$25,000.00 for the third and each subsequent offense pursuant to the notification and other requirements of N.J.S.A. 58:12A-10(b) (Section 17(b) of P.L. 1983, c.443);

i. If the violation is of a continuing nature, each day during which it continues subsequent to receipt of an order to cease the violation shall constitute an additional, separate and distinct offense.

ii. The authority to levy a civil administrative penalty is in addition to all other enforcement provisions in the Act or A-280, and the payment of a civil administrative penalty shall not be deemed to affect the availability of any other enforcement provision in connection with the violation for which the penalty is levied.

3. The Department is hereby authorized and empowered to compromise and settle any claim for a penalty under N.J.S.A. 58:12A-10 (Section 17 of P.L. 1983, c.443) in such amount in the discretion of the Department as may appear appropriate and equitable under all of the circumstances including the posting of a performance bond by the violator.

4. Any person who violates the Act or an administrative order issued pursuant to N.J.S.A. 58:12A-10(b) (Section 17(b) of P.L. 1983, c.443) or a court order issued pursuant to N.J.S.A. 58:12A-10(a) (Section 17(a) of P.L. 1983, c.443) or who fails to pay a civil administrative penalty in full pursuant to N.J.S.A. 58:12A-10(b) (Section 17(b) of P.L. 1983, c.443) shall be subject, upon order of the court, to a civil penalty not to exceed \$10,000.00 per day of the violation, and each day's continuance of the violation shall constitute a separate and distinct violation.

i. Any penalty imposed under N.J.S.A. 58:12A-10(d) (Section 17(d) of P.L. 1983, c.443) may be recovered with costs in a summary proceeding pursuant to "the penalty enforcement law" (N.J.S.A. 2A:58-1 et seq.) and the Superior Court and county district court shall have jurisdiction to enforce "the penalty enforcement law".

SUBCHAPTER 15. FEES

7:10-15.1 Scope and authority

(a) This subchapter shall constitute the rules governing the establishment of Safe Drinking Water Program fees as authorized by the Safe Drinking Water Act at N.J.S.A. 58:12A-9. This subchapter shall be operative as of July 1, 1988.

(b) Any fee under this subchapter that is subject to N.J.A.C. 7:1L shall be payable in installments in accordance with N.J.A.C. 7:1L.

Amended by R.1995 d.205, effective April 17, 1995. See: 26 N.J.R. 3922(a), 27 N.J.R. 1576(b).

7:10-15.2 Purpose

The purpose of this subchapter is to establish fees for the Safe Drinking Water Program based upon, and not to exceed, the estimated cost of regulating, monitoring, administering and enforcing the Safe Drinking Water Program. The fee schedule will be periodically reviewed with respect to any changes in the costs of conducting, monitoring, administering and enforcing the Safe Drinking Water Program.

7:10-15.3 Definitions

The following words and terms, when used in this subchapter, shall have the following meaning unless the context clearly indicates otherwise:

"Annual operation fee" means the annual fee assessed to each public community water system including, at a minimum, each holder of a construction approval for public community water systems approved pursuant to N.J.A.C. 7:10-11.

"Annual physical connection fee" means the fee assessed for the annual renewal of a physical connection permit pursuant to N.J.A.C. 7:10-1.

"Bulk distribution system" means a water system that wholesales water in bulk fashion to public community water systems for resale to consumers.

"Distribution system" means all pipes and conveyances from the well or water treatment plant, including storage facilities.

"Initial physical connection permit fee" means the fee assessed for an original physical connection permit.

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

"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 reported on the Department's annual inspection report required by N.J.A.C. 7:10-1.4.

"Project construction cost" means the total project cost as reported on the application for a permit to construct and operate a public community water system or bulk distribution system under N.J.A.C. 7:10-1.4.

"Project construction cost" means the total project cost as reported on the application for a permit to construct and operate a public community water system or bulk distribution system under N.J.A.C. 7:10-11.

"Safe Drinking Water Program" means the regulatory requirements and activities conducted pursuant to the authority of the New Jersey Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., and the Water Supply Management Act, N.J.S.A. 58:1A-1 et seq.

7:10-15.4 Applicability

This subchapter shall be applicable to all owners of public community water systems as defined in N.J.A.C. 7:10-1.3, to holders of physical connection permits, and to bulk distribution systems.

7:10-15.5 Establishment of fee schedule

(a) The Department shall periodically review the fee schedule set forth in this subchapter.

(b) Upon a determination by the Department that the existing fee schedule does not adequately cover the cost of

conducting, monitoring, administering and enforcing the State Drinking Water Program, it shall, after consideration of other funding sources, propose a new fee schedule to adequately cover the actual cost of the Safe Drinking Water Program.

7:10-15.6 Payment of fees

(a) Owners or operators of public community water systems and bulk distribution systems shall pay annual operation fees on or before July 1 of each year in accordance with N.J.A.C. 7:10-15.7.

(b) Owners or operators of public community water systems and bulk distribution systems shall pay the permit application fee based upon the project construction costs at the time of application for approval in accordance with N.J.A.C. 7:10-15.7.

(c) Physical connection permittees shall pay annual physical connection fee for the physical connection permit upon application in accordance with N.J.A.C. 7:10-15.8.

(d) Applicants for a physical connection permit shall pay the initial fee for the original physical connection permit upon application in accordance with N.J.A.C. 7:10-15.8.

(e) Payment of fees shall be made by check or money order, payable to "Treasurer, State of New Jersey" and submitted to:

New Jersey Department of Environmental Protection
 Division of Water Resources
 Bureau of Safe Drinking Water
 CN-029
 Trenton, New Jersey 08625

(f) Each check or money order shall be marked to identify the nature of the fee paid and the owner of the facility.

(g) Failure to pay the fee as required by the Department may subject the violator to the penalty provision set forth in the Safe Drinking Water Act at N.J.S.A. 58:12A-10.

7:10-15.7 Calculation of fees for public community water systems and bulk distribution systems

(a) The permit application fee for the construction of a public community water system, bulk distribution system, or additions and alterations to an existing system shall be determined as follows:

1. Step One: Multiply that part of the project construction cost that is:
 - i. Less than or equal to \$250,000 by 0.9 percent;
 - ii. Between \$250,000 and \$1,000,000 by 0.6 percent;
 - and
 - iii. More than \$1,000,000 by 0.3 percent.

2. Step Two: Add the figures arrived at by the calculation under (a)1 above to obtain the total. For example, if the project cost is \$1,100,000, the fees will be \$7,050, which is the sum of 0.9 percent (.009) of the first \$250,000, 0.6 percent (.006) of the next \$750,000, and 0.3 percent (.003) of the amount greater than \$1,000,000.

$$\begin{aligned}
 \$250,000 \times .009 &= \$2,250.00 \\
 \$750,000 \times .006 &= \$4,500.00 \\
 \$100,000 \times .003 &= \underline{300.00} \\
 &= \underline{\underline{\$7,050.00}}
 \end{aligned}$$

3. The maximum and minimum permit application fees which the Department will assess shall be \$12,000 and \$100.00 respectively.

(b) For purposes of the annual operation fee, all public community water systems and bulk distribution systems, shall be classified on the basis of population served directly or indirectly on July 1 of each year. Classes shall be established as follows:

1. Class 1: 25 to 999 people;
2. Class 2: 1,000 to 9,999 people;
3. Class 3: 10,000 to 49,999 people; and
4. Class 4: 50,000 or more people.

(c) The annual operation fee for new public community water systems and new bulk distribution systems shall be paid on or before the first day of operation and prorated on a quarterly basis during the initial year of operation as follows:

1. Systems which begin operation between July 1 and September 30 shall pay the total operation fee;
2. Systems which begin operation between October 1 and December 31 shall pay three-quarters of the annual operation fee;
3. Systems which begin operation between January 1 and March 31 shall pay one-half of the annual operation fee; and
4. Systems which begin operation between April 1 and June 30 shall pay one-quarter of the annual operation fee.

(d) The annual operation fee for a permit to operate a public community water system or a bulk distribution system shall be determined as follows:

Class	Fees for Systems with no water treatment	Fees for Systems with water treatment
Class 1	\$ 60.00	\$ 120.00
Class 2	\$ 360.00	\$ 720.00
Class 3	\$ 790.00	\$1,580.00
Class 4	\$1,640.00	\$3,280.00

7:10-15.8 Calculation of fees for Physical Connection Permits

- (a) The initial physical connection permit fee shall be \$150.00.
- (b) The annual physical connection fee shall be \$200.00.

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**SUBCHAPTER 16. SAFE DRINKING WATER ACT
MAXIMUM CONTAMINANT LEVELS FOR
HAZARDOUS CONTAMINANTS**

7:10-16.1 Scope and authority

This subchapter shall constitute the rules of the Department of Environmental Protection governing the establishment of Maximum Contaminant Levels as authorized by the Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., as amended by P.L. 1983, c.443, commonly known as "the A-280 amendments".

7:10-16.2 Construction

This subchapter shall be construed so as to permit the Department to discharge its statutory functions and to effectuate the purposes of the law.

7:10-16.3 Applicability

This subchapter shall be applicable to all owners or operators of public community water systems as defined in N.J.A.C. 7:10-1.3.

7:10-16.4 Definitions

As used in this subchapter, the following words and terms shall, in addition to those provided in N.J.A.C. 7:10-1.3 and 7:10-14.3, have the following meanings unless the context clearly indicates otherwise:

"Average" means the sum of the results of the sampling analyses divided by the number of analyses. For the purpose of calculating the average of the test results, whenever the result is non-detectable or below the analytical method detection limit (MDL), half of the MDL shall be used to represent the sample analysis result for the purpose of calculating the average of the test results.

"Check samples" means additional tests performed in response to a compliance sample that exceeds an MCL.

"Department" means the New Jersey Department of Environmental Protection.

"Maximum contaminant level" or "MCL" means the maximum permissible level of a contaminant in water which is delivered to the free-flowing outlet of the ultimate user of a public water system or other water system to which State primary drinking water rules apply, except in the case of

turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

"Method detection limit" or "MDL" means the minimum concentration of a contaminant, determined pursuant to 40 C.F.R. 136 (Appendix B) or N.J.A.C. 7:18-1 et seq., that can be measured and reported with 99 percent confidence to have an analytical concentration greater than zero.

"Polychlorinated biphenyls (PCBs) total" means the sum of all the individual polychlorinated biphenyls as set forth by the appropriate analytical method as provided in N.J.A.C. 7:18-1 et seq.

"State Act" means the Safe Drinking Water Act, N.J.S.A. 58:12A-1 et seq., as amended by P.L. 1983, c.443.

7:10-16.5 Severability

If any section, subsection, provision, clause or portion of this subchapter is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this subchapter shall not be affected thereby.

7:10-16.6 Penalties

Failure by the owner or operator of a public community water system to comply with any requirement of the State Act or this subchapter may result in the penalties set forth in N.J.S.A. 58:12A-10 and N.J.A.C. 7:10-14.15.

7:10-16.7 Maximum contaminant levels (MCLs) for hazardous contaminants

(a) The maximum contaminant levels for hazardous contaminants applicable to all public community water systems shall be as follows:

Hazardous Contaminant	MCL (in parts per billion)
Benzene	1
Carbon tetrachloride	2
Chlordane	0.5
Chlorobenzene	4
Dichlorobenzene(s)	
o-	600
m-	600
p-	‡
1,2-Dichloroethane	2
1,1-Dichloroethylene	2
1,2-Dichloroethylene (cis & trans)	10
Ethylene Glycol	‡
Formaldehyde	‡
n-Hexane	‡
Kerosene	‡
Methyl ethyl ketone	‡
Methylene chloride	2
Polychlorinated biphenyls (PCBs) (Total)	0.5
Tetrachloroethylene	1
Trichlorobenzene(s) (1,2,4-Trichlorobenzene)	8

Hazardous Contaminant	MCL (in parts per billion)
1,1,1-Trichloroethane	26
Trichloroethylene	1
Vinyl chloride	2
Xylene(s)	44

‡ No MCL for these contaminants is established.

7:10-16.8 Compliance requirements and procedures

(a) In accordance with the testing procedures provided in N.J.A.C. 7:10-14 and 7:10-16.9, the owner or operator of a public community water system shall analyze for each contaminant listed in N.J.A.C. 7:10-16.7 for which there is an MCL.

(b) The owner or operator of a public community water system shall, upon receipt of an analysis that reports an exceedance of the maximum contaminant levels for one or more of the hazardous contaminants set forth in N.J.A.C. 7:10-16.7, take the following actions:

1. Notify the Department in writing of the test result within seven days of receipt of the analysis at the following address:

Bureau of Safe Drinking Water
 Division of Water Resources
 Department of Environmental Protection
 CN 029
 Trenton, New Jersey 08625
 (609) 292-5550

2. Obtain three additional samples and have them analyzed within 30 calendar days of receipt of the initial analysis in accordance with the testing procedures required under (a) above;

3. If the average of the four tests is above the MCL, report to the Department by telephone (609-292-5550) within 48 hours and in writing within seven days of the receipt of the analysis required pursuant to (b)2 above at the address provided in (b)1 above; and

4. Comply with the public notification requirements of N.J.A.C. 7:10-16.10.

(c) The owner or operator of a public community water system may, where the additional three samples and analyses required pursuant to (b)2 above provide evidence that no hazardous contaminant listed in N.J.A.C. 7:10-16.7 exceeds the method detection limit, request that the Department consider the initial test to be inaccurate and unreproducible. The Department shall, in considering such requests, base its determination upon the following factors:

1. Previous analytical results;
2. Vulnerability of the water supply to a source of contamination; and
3. The identity and concentration of the contamination initially reported.

(d) The Department may, upon being notified in accordance with (b)3 above of the exceedance of any MCL, take one or more of the following actions:

1. Require the owner or operator of the public community water system to conduct additional testing and/or sampling to determine the nature and extent of the contamination; and/or
2. Require the owner or operator of the public community water system to investigate alternative sources of water.

7:10-16.9 Laboratory testing

(a) The analysis required by this subchapter shall be conducted at a laboratory, certified in accordance with N.J.A.C. 7:18 and the laboratory shall be certified for the specific method for which the test is conducted.

(b) All analysis shall be conducted by methods and laboratories capable of achieving MDLs below the respective MCL of the contaminant being tested.

(c) The owner or operator of a public community water system shall, when submitting sample analyses to the Department, provide the following:

1. The analytical result of any contaminant monitored for as part of the analytical testing method that is used, including, but not limited to, the specifically regulated analyses;
2. The values of all analyses above the MDL; and
3. The quality control parameters submitted on the Department's QC Data for Hazardous Contaminant Analysis Form.

7:10-16.10 Public notification

The owner or operator of a public community water system shall provide public notification of any MCL violation in accordance with the most current version of the Federal National Primary Drinking Water regulations (40 CFR 141.32, as amended).

7:10-16.11 Remediation requirements and procedures

(a) Except as provided in (b) below, the owner or operator of a public community water system that exceeds the MCL for any hazardous contaminant listed in N.J.A.C. 7:10-16.7 shall, within one year of receipt of the results of the tests conducted pursuant to N.J.A.C. 7:10-16.8, take any action necessary to bring the water into compliance with the MCL.

(b) The Department may require that the owner or operator take prompt action to remediate upon a determination that such action is necessary to abate an immediate public health threat or may extend the period of compliance (after a public hearing and a determination that the extension will not pose an imminent threat to public health) if new construction is required.

(c) The Department may, upon a failure by the owner or operator to remediate in accordance with the requirements of this section, take one or more of the following actions:

1. Enjoin the water purveyor from continuing to supply water to the public;
2. Establish a program to bring the public community water system into compliance;
3. Provide the customers of the public community water system with an alternate potable water supply; and/or
4. Seek penalties in accordance with N.J.A.C. 7:10-16.6.

7:10-16.12 Recordkeeping

(a) The owner or operator of a public community water system shall retain on its premises all initial and periodic analyses and other relevant documents and information required pursuant to N.J.A.C. 7:10-14.14(a) for a period of not less than 10 years.

(b) In accordance with this section, analyses may be kept or data may be transferred to tabular summaries provided that the following information is included:

1. The date, location (municipality, lot and block number), time of sampling, and the name of the person who conducted the sampling;
2. Identification of the sample, specifically whether the sample was a routine distribution sample, check sample (by number or description), raw sample, process water sample or other special purpose sample;
3. Date of analysis;
4. Laboratory name, including certification number and name of the person responsible for performing the analysis;
5. The analytical technique/method used;
6. Chain of custody information concerning the handling of sample; and
7. The concentration of the hazardous contaminant made known by the analysis.

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