

TABLE OF CONTENTS

Certification of Operators of Wastewater Treatment Plants

Repealed 25-26- 1—25-26-23

Certification of Operators of Wastewater Treatment Plants

Secs. 25-26-1—25-26-6.

Repealed, February 11, 1969.

Secs. 25-26-7—25-26-14.

Repealed, June 6, 1974.

Secs. 25-26-15—25-26-23.

Repealed, June 25, 1984.

TABLE OF CONTENTS

Qualifications of Operators of Water Treatment Plants

Repealed 25-32-1—25-32- 7

Certification of Water Treatment Plant Operators

Definitions 25-32- 7a

Classification of water treatment plants 25-32- 8

Qualifications for certified water treatment operators 25-32- 9

Classification of water distribution systems. 25-32-10

Qualifications for certified distribution system operators. 25-32-11

Qualifications for small water system operators 25-32-11a

Reciprocity 25-32-12

Disciplinary action by the department. 25-32-13

Renewal. 25-32-14

Qualifications of Operators of Water Treatment Plants

Secs. 25-32-1—25-32-7.

Repealed, September 24, 1982.

Certification of Water Treatment Plant Operators

Sec. 25-32-7a. Definitions

As used in Sections 25-32-7a to 25-32-14, inclusive:

- (a) “(ABC)” means the Association of Boards of Certification.
- (b) “Available” means reasonably accessible in order to respond to plant or system changes or malfunctions.
- (c) “Certified Operator” means an operator who has met the education, experience and examination requirements specified in sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies and has been certified by the department.
- (d) “Chief Operator” means a certified operator who has been designated by the system as the operator who has direct responsible charge for the operation and maintenance of the plant, distribution system or small water system.
- (e) “Community water system” means a public water system that serves at least twenty-five (25) residents.
- (f) “Conditional operator” means an existing operator who had direct responsible charge, for at least the one year prior to the effective date of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies, of a plant, distribution system, or small water system which is required to have a certified operator for the first time as a result of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the regulations of Connecticut state agencies and has been duly certified by the department.
- (g) “Department” means Connecticut Department of Public Health.
- (h) “Direct Responsible Charge” means active, daily responsibility for the operation of a plant, distribution system, or small water system.
- (i) “Distribution system” means any combination of pipes, tanks, pumps, etc. which delivers water from the source(s) and/or treatment facility or facilities to the consumer.
- (j) “Limited Operator” means an existing operator who had direct responsible charge as of February 9, 1989 and has been duly certified by the department.
- (k) “Non-transient non-community water system” (NTNC) means a public water system that is not a community system and that regularly serves at least twenty-five (25) of the same persons over six (6) months per year.
- (l) “Operator” means any individual either employed or retained by a public water system who, as part of their job duties, is assigned the responsibility for operational activities that shall directly impact the quality and/or quantity of drinking water provided to consumers.
- (m) “Operator-in-Training” means a person who has received either a Certificate of Achievement in Water Management from a Connecticut Community -Technical College, or an equivalent as determined by the Department and who has met the examination requirements specified in sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies.
- (n) “Provisional Operator” means an operator who is given permission by the Department to have direct responsible charge, for up to 2 years, to allow the operator to become certified.

(o) “Public water system” or “system” means any water company, as defined in section 25-32a of the Connecticut General Statutes (CGS), supplying water to fifteen (15) or more consumers, as defined in section 25-32a of the CGS, or twenty-five or more persons daily, at least sixty (60) days of the year.

(p) “Small water system” means a community water system or a non-transient non-community water system that serves less than 1000 persons and has no treatment or has only treatment which does not require any chemical treatment, process adjustment, backwashing or media regeneration by an operator.

(q) “Treatment plant” or “plant” means a building or structure containing equipment for altering the characteristics of drinking water. Plants, which do not involve any chemical treatment, process adjustment, backwashing or media regeneration by an operator, are excluded from this definition.

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-8. Classification of water treatment plants

(a) Water treatment plants shall be classified according to points assigned to each plant based on the ABC system. The classification form shall be provided by the Department, and shall be filled in by the system. The contents of such form shall be verified by the department. The classifications are as follows:

- Class I 30 points or less
- Class II 31-55 points
- Class III 56-75 points
- Class IV 76 points or greater

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-9. Qualifications for certified water treatment operators

(a) Except as provided in subsections (e) and (f) of this section, every community water system and every non-transient non-community water system treatment plant shall have at least one operator who is certified at the plant’s class or higher and who shall be designated by the system as the chief operator. The chief operator shall have direct responsible charge of the plant. In the event that the chief operator is not available, the system shall place an operator, who is certified at the plant’s class or higher, in direct responsible charge to serve in the interim. All operators in direct responsible charge and any operators making process control/system integrity decisions about water quality or quantity, that affect public health, shall be certified at the plant’s class or higher or certified as a conditional or provisional operator.

(b) To become certified as a water treatment plant operator a person must demonstrate the ability to responsibly operate a plant of the given classification applied for (I, II, III, IV) by passing a written examination. To qualify to take the examination, a person shall submit an application to the Department on a form provided by the Department.

(c) Minimum education and experience requirements to qualify for the written examination:

Class	Education (yrs.)	Experience in class (yrs.)
I	12	1
II	12	2
III	12	3
IV	12	4

The minimum education requirement shall be met by either a high school diploma or a high school equivalency diploma. Any amount of educational training beyond high school (12 years) in a field of study applicable to water treatment may be substituted for an equal amount of the experience requirement; however, one year of experience is, for purposes of this subsection, required for all classes. Experience in class means experience gained in operating a particular class plant or the next lower class providing that the operator has direct responsible charge.

(d) **Examination requirement for certification** — A written examination administered by the Department will be given to qualifying operator candidates. The examination will test the candidate's ability to responsibly operate a plant of the given classification applied for (I, II, III, IV). A passing score will be required for certification.

(e) **Existing operators** — If an operator having direct responsible charge of a plant as of February 9, 1989 is not certified, the department may certify that operator as a limited operator upon presentation of an application by the system by February 9, 1990. This certification is only granted for a specific plant and cannot be transferred to another plant, system or individual. A limited operator cannot be designated as a chief operator but can serve in direct responsible charge.

If an operator has had direct responsible charge of a non-transient non-community water system water treatment plant for at least the one year prior to the effective date of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies and is not certified, the Department may certify that operator as a conditional operator upon presentation of an application by the system within one year of the effective date of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies. This certification is only granted for a specific plant and cannot be transferred to another plant, system or individual. The conditional certification is no longer valid if the plant classification changes to a higher level. A conditional operator shall meet all renewal requirements including training hour requirements for the operator class equal to the classification of the specific plant. The Department may certify a maximum of two conditional operators per non-transient non-community water system. A conditional operator can perform the functions of a certified operator.

(f) **Provisional operators** — If a system does not have a qualified operator as outlined in Section 25-32-9(a) and if the department determines that this is due to reasons beyond the system's control, the Department may certify an operator as a provisional operator. The system must submit a request in writing, which indicates the reasons for not having a qualified operator and include an application. The provisional operator certificate would only be granted for a given plant and only be given to an operator who could qualify to take the appropriate class exam within 2 years. A provisional operator can perform the functions of a certified operator.

(g) **Operator-in-training** — A person who has received either a certificate of achievement in water management from a Connecticut Community-Technical College, or an equivalent as determined by the Department, may apply to take any class examination. After successful completion of the examination, the person will be an operator-in-training. After the operator-in-training has completed the education and experience requirements of the appropriate class, he may apply to become a certified operator.

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-10. Classification of water distribution systems

(a) Each water distribution system shall be classified according to the population served.

The classifications are as follows:

Class I	1000–5000 persons served
Class II	5001–50,000 persons served
Class III	Over 50,000 persons served

(Effective February 9, 1989)

Sec. 25-32-11. Qualifications for certified distribution system operators

(a) Except as provided in subsections (f) and (g) of this section, every community water and every non-transient non-community water distribution system which serves 1,000 or more persons shall have at least one operator who is certified at the distribution system’s class or higher and who shall be designated by the system as the chief operator. The chief operator shall have direct responsible charge of the distribution system. In the event that the chief operator is not available, the system shall place an operator, who is certified at the distribution system’s class or higher, in direct responsible charge to serve in the interim. Except as provided in subsections (f) and (g), all operators in direct responsible charge and any operators making process control/system integrity decisions about water quality or quantity, that affect public health, shall be certified at the distribution system’s class or higher or certified as a conditional or provisional operator.

(b) To become certified as a distribution system operator a person must demonstrate the ability to responsibly operate a distribution system of the given classification applied for (I, II, III) by passing a written examination. To qualify to take the examination, a person shall submit an application to the Department on a form provided by the Department.

(c) Minimum education and experience requirement to qualify for the written examination:

Class	Education (yrs.)	Experience (yrs.)
I	12	1
II	12	2
III	12	4

Each year of education beyond high school (12 years) in A field applicable to water distribution may serve to satisfy one year of the experience requirement to qualify for the written examination. The minimum education requirements shall be met by either a high school diploma or a high school equivalency diploma. A minimum of one year of experience in operating a distribution system is required for all classes.

(d) **Examination requirement for certification** — A written examination administered by the Department will be given to qualifying system operator candidates. The examination will test the candidate’s ability to responsibly operate a distribution system of the given classification applied for (I, II, III). A passing score shall be required for certification.

(e) Every public water system which is required to have testable backflow prevention devices in its system, pursuant to section 19-13-B38a of the Regulations of Connecticut State Agencies, shall have those devices tested by a person who has completed and passed a course on the testing of backflow preventers administered or approved by the Department.

(f) **Existing operators** — If an operator having direct responsible charge of a distribution system as of February 9, 1989 is not certified, the Department may certify that operator as a limited operator upon presentation of an application by the system by February 9, 1990. This certification is only granted for a specific distribution system and cannot be transferred to another distribution system. A limited operator cannot be designated as a chief operator but can serve in direct responsible charge.

If an operator has had direct responsible charge of a non-transient non-community water system distribution system, which serves 1,000 or more persons, for at least the one year prior to the effective date of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the regulations of Connecticut State Agencies and is not certified, The Department may certify that operator as a conditional operator upon presentation of an application by the system within one year of the effective date of the most recent revisions of sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies. This certification is only granted for a specific distribution system and cannot be transferred to another system, plant, or individual. The conditional certification is no longer valid if the distribution system classification changes to a higher level. A conditional operator shall meet all renewal requirements including training hour requirements for the operator class equal to the classification of the specific distribution system. The Department may certify a maximum of two conditional operators per distribution system.

(g) **Provisional operators** — If a system does not have a qualified operator as outlined in Section 25-32-11(a) and if the Department determines that this is due to reasons beyond the system's control, the Department may certify an operator as a provisional operator.

The system must submit a request in writing which indicates the reasons for not having a qualified operator and include an application. The provisional operator certificate would only be granted for a given distribution system and only be given to an operator who could qualify to take the appropriate class exam within 2 years.

(h) Every public water system which has consumer premises required to be inspected for cross connections, pursuant to section 19-13-B102(f) of the Regulations of Connecticut State Agencies, shall have those premises inspected by a person who has completed and passed a course on cross connection inspections administered or approved by the Department.

(i) **Operator-in-Training** — A person who has received either a certificate of achievement in water management from a Connecticut Community-Technical College, or an equivalent as determined by the Department, may apply to take any class examination for a certified distribution system operator. After successful completion of the examination, the person will be an operator-in-training. After the operator-in-training has completed the education and experience requirements of the appropriate class, he may apply to become a certified operator.

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-11a. Qualifications for small water system operators

(a) Except as provided in subsection (e) and (f) of this section, every community water system and every non-transient non-community water system which meets the definition of small water system shall have at least one operator who is certified as a small water system, water treatment plant or water distribution system operator who shall be designated by the system as the chief operator. In the event that the chief operator is not available, the system shall make arrangements to ensure that another certified operator is available to serve in direct responsible charge in the

interim. All operators in direct responsible charge and any operators making process control/system integrity decisions about water quality or quantity, that affect public health, shall be certified as an operator, conditional operator or provisional operator for that system.

(b) To become certified as a small water system operator, a person shall demonstrate the ability to responsibly operate a small water system by passing a written examination. To qualify to take the examination, a person shall submit an application to the department on a form provided by the department.

(c) Minimum education and experience requirements to qualify for the written examination:

Class	Education (yrs.)	Experience
Small water system	12 years	6 months

The minimum education requirement shall be met by either a high school diploma or a high school equivalency diploma. Six (6) months experience operating a small water system, water treatment plant or water distribution system may be substituted for the education requirement. These six (6) months of experience shall not also be used to meet the experience requirement.

The experience requirement shall be met by operating a small water system, water treatment plant or water distribution system. A minimum of twenty (20) hours of training acceptable to the department may be substituted for the experience requirement.

(d) Examination Requirement for Certification - A written examination administered by the department shall be given to qualifying operator candidates. The examination shall test the candidate's ability to operate a small water system. A passing score shall be required for certification.

(e) Conditional Operators - If an operator has had direct responsible charge of a small water system for at least the one year prior to the effective date of the most recent revisions of Sections 25-32-7a to 25-32-14, inclusive, of the regulations of Connecticut State Agencies and is not certified, the department may certify an operator as a conditional operator upon presentation of an application by the system within one year of the effective date of the most recent revisions of Sections 25-32-7a to 25-32-14, inclusive, of the regulations of Connecticut State Agencies. This certification is only granted for a specific system and cannot be transferred to another system, plant or individual. The conditional certification is no longer valid if the system classification changes to a higher level. A conditional operator shall meet all renewal requirements including training hour requirements for a small water system operator. The department may certify a maximum of two conditional operators per small water system.

(f) Provisional Operators - If a system does not have a qualified operator as outlined in section 25-32-11a(a) and if the department determines that this is due to reasons beyond the system's control, the department may certify an operator as a provisional operator. The system shall submit a request in writing which indicates the reasons for not having a qualified operator and include an application. The provisional operator certificate shall only be granted for a given system and only be given to an operator who could qualify to take the appropriate class exam within 2 years.

(Adopted effective July 26, 2001; amended May 2, 2003)

Sec. 25-32-12. Reciprocity

The Department may waive the examination requirements specified in Section 25-32-9(d) Section 25-32-11(d), and Section 25-32-11a(c) in the event that the

applicant has passed an examination given by another state or ABC and the Department has entered into a reciprocity agreement with that state or ABC. A reciprocity agreement may only be established if the Department deems that the requirements of the other state or ABC are at least as stringent as those of the Department.

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-13. Disciplinary action by the department

The commissioner may take any disciplinary action set forth in section 19a-17 of the Connecticut General Statutes, except for the assessment of a civil penalty, against an operator holding a certificate issued pursuant to sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies, for any of the following reasons: fraud or material deception in procuring a certificate, the renewal of a certificate or the reinstatement of a certificate; fraud or material deception in the performance of the certified operator’s professional activities; incompetent, negligent or illegal performance of the certified operator’s professional activities; conviction of the certified operator for a felony; or failure of the certified operator to complete the training required under sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies.

(Effective February 9, 1989; amended July 26, 2001)

Sec. 25-32-14. Renewal

(a) Treatment plant, distribution system and small water system operators - Certificates issued pursuant to sections 25-32-9, 25-32-11 and 25-32-11a of the Regulations of Connecticut State Agencies must be renewed every 3 years by the operator to remain valid. The renewal form shall be provided by the Department and must be completed by the operator. This section does not apply to certificates for Provisional Operators issued pursuant to sections 25-32-9(f), 25-32-11(g) and 25-32-11a(e) of the Regulations of Connecticut State Agencies.

Renewal requirements - to qualify for renewal, a treatment plant, distribution system or small water system operator shall complete the training hours specified in table 1, for each three year renewal period.

Table 1

<u>Operator Class</u>	<u>Training Hours</u>
Treatment I, Distribution I, Small system	10
Treatment II, Distribution II	20
Treatment III & IV, Distribution III	30

In order to phase in the training hour requirements, applicants shall complete the training hours specified for the following renewal periods in table 2. These requirements only apply for certificates, which expire less than three years after the effective date of the most recent revisions of sections 25-32-7a to 25-32-14 of the Regulations of Connecticut State Agencies. After that, table 1 applies.

Table 2

<u>Operator Class</u>	<u>Training Hours Per Renewal Period</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Treatment I, Distribution I, Small System	0	3	7
Treatment II, Distribution II	0	7	13
Treatment III & IV, Distribution III	0	10	20

Renewal period A applies to certificates, which expire less than one year after the effective date of the most recent revisions of sections 25-32-7a to 25-32-14 of the Regulations of Connecticut State Agencies.

Renewal period B applies to certificates which expire one year or more and less than two years after the effective date of the most recent revisions of sections 25-32-7a to 25-32-14 of the Regulations of Connecticut State Agencies.

Renewal period C applies to certificates, which expire two years or more and less than three years after the effective date of the most recent revisions of sections 25-32-7a to 25-32-14 of the Regulations of Connecticut State Agencies.

The training shall be in treatment plant, distribution system or small system operation and be acceptable to the Department.

(b) If an operator does not renew his or her certificate by the expiration date, the certificate expires and the operator is no longer certified. An operator may renew an expired certificate for up to six months after the expiration date by meeting all renewal requirements. To become certified greater than six months after the expiration date, an operator shall meet all current certification requirements including successful completion of an examination to be recertified.

(Effective February 9, 1989; amended July 26, 2001)

TABLE OF CONTENTS

Source Water Protection Measures

Repealed	25-32d-1
Definitions	25-32d-1a
Preparation of plans and schedule for submission	25-32d-2
Contents of the plan	25-32d-3
Calculation of safe yield	25-32d-4
Submittal, completeness and approval.	25-32d-5
Failure to submit a plan	25-32d-6

Source Water Protection Measures

Sec. 25-32d-1.

Repealed, August 10, 2000.

Sec. 25-32d-1a. Definitions

(a) As used in sections 25-32d-1a to 25-32d-6, inclusive, of the Regulations of Connecticut State Agencies:

(1) “1 in 100 occurrence frequency” means the 1 in 100 year recurrence interval for the critical dry period or the one percent non-exceedance probability for the critical drawdown duration;

(2) “Active source” means a department approved source of supply which meets state and federal water quality standards, with adequate department approved treatment facilities as needed, or for which compliance schedules are in place. An active source is one that is permanently connected to the system and may include, but need not be limited to, a seasonal or standby source of supply that may be used intermittently or on a partial year basis;

(3) “Adequate water supply” means a quantity of water sufficient to meet demands even in a critical dry period;

(4) “Available water” means the maximum amount of water a company can dependably supply, taking into account the following reductions applied to safe yield: any limitations imposed by hydraulics, treatment, well pump capabilities, reductions of well yield due to clogging that can be corrected with redevelopment, transmission mains, permit conditions, source construction limitations, approval limitations, or operational considerations; and the safe yield of active sources and water supplied according to contract, provided that the contract is not subject to cancellation or suspension and assures the availability of water throughout a period of drought and that the supply is reliable;

(5) “Average daily demand” means the total annual production from all sources of supply divided by the number of days in that calendar year;

(6) “Commissioner” means the Commissioner of Public Health or his designated representative;

(7) “Complete plan” means a plan that satisfies the content requirements of sections 25-32d-2 to 25-32d-4, inclusive, of the Regulations of Connecticut State Agencies and that is technically adequate for its intended purpose;

(8) “Conservation” or “water conservation” means measures designed to promote efficient use of water and to eliminate waste of water;

(9) “Consumptive losses” means any water uses which do not result in the water being discharged back into the water source at or near the withdrawal point in substantially the same quality and quantity as prior to use;

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

(11) “Critical drawdown duration” means the length of time for a reservoir to go from full to the bottom of usable storage for single-year cycle reservoirs, and from full to the bottom of usable storage without spilling in the intervening period for multi-year cycle reservoirs;

(12) “Critical dry period” means the historic drought event for which yield is the least. For surface water sources of supply the critical dry period has both a critical drawdown duration and a 1 in 100 occurrence frequency. For ground water sources of supply the critical dry period is the 180 day pumping event with no

precipitation recharge and a seven day duration and a one in ten year recurrence frequency of the stream flow;

(13) "Critical Lands to be protected" means any land located within a source water protection area;

(14) "Critical system component" means any water system component or facility necessary to deliver, with at least twenty-five pounds per square inch of pressure, one hundred percent of the average daily demand of the system or any portion of the system that it serves;

(15) "Demand management" means conservation measures which provide assistance for consumers to use water economically and efficiently and that may achieve permanent water savings;

(16) "Department" means the Department of Public Health or its designated representative;

(17) "Emergency source" means a source of supply identified by the water company within its water supply emergency contingency plan for possible use at various stages of an emergency. An emergency source is not an active source and is not considered part of available water. An emergency source may be prohibited from use as a source of supply due to contractual limitations, lack of water quality monitoring, known or suspected water quality limitations, the need for additional treatment prior to use, or the absence of any required state and local approval;

(18) "Flashboards" means temporary or semi-permanent structures across the spillway of a reservoir. Flashboards increase water levels and storage volumes that are designed to be released during flood events;

(19) "Inactive source" means a source of supply that is not used or maintained as an active or emergency source of supply, but has not been abandoned in accordance with Section 25-33k of the Connecticut General Statutes, is not routinely monitored, and is physically disconnected from the system;

(20) "Initial plan" means the first plan for a water company ever requested by the commissioner pursuant to section 25-32d of the Connecticut General Statutes;

(21) "Major users" means the ten water customers with the greatest annual volumes of water use for the most recent calendar year and all other users with individual meters or estimated use exceeding an annual average of 50,000 gallons of water per day based on the most recent calendar year;

(22) "Margin of safety" means the unitless ratio of available water to demand;

(23) "Mass balance methodology" means a technique based on the continuity equation, in which the sum of all water inflows minus the sum of all water outflows is equal to the change in storage. Inflows include streamflow, direct precipitation, diversions, routing from upstream reservoirs, ground water discharge, and supplementation from wells. Outflows include water supply withdrawals, streamflow releases, evaporation, diversions, consumptive losses, groundwater recharge, uncontrolled releases downstream or spills from the reservoir, and dam leakage;

(24) "Maximum month demand" means the highest water demand in a month calculated by dividing the total production from all sources of supply for each calendar month by the number of days in that month and expressed in gallons per day;

(25) "Minimum stream flow releases" means water released from a reservoir for the purpose of providing a specified flow rate downstream of a dam. The flow requirements may be fixed or variable;

(26) "Modified plan" means any amendments, modifications or page revisions to an initial or revised plan as requested by the commissioner or submitted by a water company in order to satisfy the requirements for completeness or plan approval;

(27) “Non-revenue water” means the difference between total annual metered water production and the sum of annual metered water consumption plus any other properly estimated revenue-producing unmetered water;

(28) “Peak day demand” means the annual maximum daily rate of water use measured in gallons per day;

(29) “Planning periods” means time periods for projecting future demands for planning to meet future water supply needs. Planning periods are five years from the time of plan preparation and twenty years (20) and fifty (50) years from the last decennial census;

(30) “Public or privately-owned protected lands” means any combination of state forest, parklands and municipally or privately held land, excluding water company-owned lands, designated as protected open space in a delineated source water protection area;

(31) “Regional planning organization” means regional planning agencies created pursuant to the provisions of sections 8-31a to 8-37b, inclusive, of the Connecticut General Statutes, regional councils of elected officials created pursuant to the provisions of sections 4-124c to 4-124h, inclusive, of the Connecticut General Statutes, where such councils have undertaken to exercise the powers of regional planning agencies and regional councils of governments created pursuant to the provisions of sections 4-124i to 4-124p, inclusive, of the Connecticut General Statutes;

(32) “Revised plan” means any subsequent plan requested by the commissioner or submitted by a water company pursuant to section 25-32d of the Connecticut General Statutes after the initial plan and excluding modified plans;

(33) “Safe yield” means the maximum dependable quantity of water per unit of time which may flow or be pumped continuously from a source of supply during a critical dry period without consideration of available water limitations;

(34) “Source of supply” means any well, spring, reservoir, stream, river or other location where water is siphoned, pumped, channeled, or withdrawn for water supply purposes, including interconnections with other water companies;

(35) “Source water assessment program” (SWAP) means a program adopted by the State to evaluate the susceptibility of public water supply sources to potential sources of contamination, pursuant to the federal Safe Drinking Water Act (SDWA) Amendments of 1996, 42 U.S.C. Section 300j-13;

(36) “Source Water Assessment Program Work Plan” means the strategy plan prepared by the Department of Public Health to implement the provisions of the Source Water Assessment Program.

(37) “Source Water Assessment Report” means the official document created by the Department of Public Health pursuant to the Safe Drinking Water Act (SDWA) Amendments of 1996, 42 U.S.C. Section 300j-13;

(38) “Source water protection area” means an area of land delineated by the state Source Water Assessment Program (SWAP), and identified in the Connecticut Source Water Assessment Program Work Plan, that contributes water to any public water supply source where significant potential contaminant sources (SPCS) are identified, evaluated, and inventoried in order to protect the purity of any public water supply source;

(39) “Stabilization” means a condition measured during a pumping test when no more than a total of 0.25 feet of drawdown occurs over the last twelve hours prior to completion of the test or, where drawdown cannot be determined to that accuracy due to equipment inadequacy, no more than a total of 1.0 foot;

(40) “State agency” means the Department of Public Health, the Department of Environmental Protection, the Department of Public Utility Control, or the Office of Policy and Management, as applicable;

(41) “Supply deficient” means a supply of available water insufficient to meet average daily demand, maximum month demand, or peak day demand;

(42) “Supply management” means conservation measures which improve the efficiency of and eliminate waste in the production and distribution of water within a system;

(43) “Usable storage” means the difference between total storage volume of a water supply reservoir and the remaining volume below the minimum operational level, intake pipe elevation, or water elevation above which water can be treated to meet water quality standards, whichever is least;

(44) “User category” means metered residential, metered commercial, metered industrial, metered public authorities, unmetered residential, unmetered commercial, unmetered industrial, unmetered public authorities, and non-revenue water. Residential includes apartments and condominiums;

(45) “Water company” or “company” means a water company as defined in Section 25-32a of the Connecticut General Statutes;

(46) “Water supply emergency contingency plan” means response procedures and preparations for water supply emergencies due to contamination, power outages, drought, flood or failure of any or all critical system components by natural or manmade events;

(47) “Water supply emergency” means any event that may adversely impact the quality or quantity of potable water supplies such that it may not be sufficient to serve customers in accordance with the provisions of the Public Health Code;

(48) “Water supply system” means any combination of interconnected sources and facilities for the purposes of supplying potable water which are owned and operated by the same water company; and

(49) “Watershed” means land from which water drains into a water company’s source of supply.

(Adopted effective August 10, 2000; amended August 3, 2006)

Sec. 25-32d-2. Preparation of plans and schedule for submission

(a) Each water company supplying water to 1,000 or more persons or 250 or more consumers, and any other water company requested by the commissioner, shall submit a water supply plan for approval in conformance with Sections 25-32d-1a through 25-32d-6, inclusive, of the Regulations of Connecticut State Agencies.

(b) If the commissioner requests a water company to submit an initial plan, the water company shall submit the plan within two years from the date of the request.

(c) If the commissioner requests a water company to submit a revised plan, the water company shall submit the plan within one year from the date of the request.

(d) In preparing the plan, the water company shall:

(1) Provide a separate analysis for each water supply system;

(2) use gallons as a unit of measure; and

(3) use the most current national geodetic vertical datum from the National Geodetic Survey, unless otherwise specified.

(Adopted effective August 10, 2000)

Sec. 25-32d-3. Contents of the plan

Each water supply plan submitted shall evaluate the water supply needs in the service area of the water company and propose a strategy to meet such needs. The plan shall contain:

- (a) A description of the existing water supply system, including:
- (1) The legislative or franchise authority for the areas proposed to be served by the plan;
 - (2) a list and description of: service areas; sources of supply, including active, emergency and inactive sources, with a description of what portion of the service area is served by each source of supply; pump stations; and storage and treatment facilities;
 - (3) a map of: water company owned lands, service areas, sources of supply, interconnections, pumping stations, pressure zones, source water protection area boundaries, storage, treatment facilities, public or privately-owned protected lands.
 - (4) a map and description of existing transmission and distribution facilities, including age, materials, capacity and condition, if known;
 - (5) a description of meter reading and testing program and extent of metering;
 - (6) a schematic of the water supply system's hydraulic profile;
 - (7) a general discussion of the water supply system's fire flow capabilities;
 - (8) the calculation of the safe yield of each source of supply in accordance with Section 25-32d-4 of the Regulations of Connecticut State Agencies;
 - (9) a summary of monthly system production data by sources of supply and a summary of system average daily demands, maximum month demands and peak day demands for the previous five years;
 - (10) a list, description, and map of existing interconnections, and the quantities of water sold to or purchased from other water companies during the previous five years, and any limitations on their use;
 - (11) a history of water quality violations in each water supply system for the previous five years and a trend analysis for water quality parameters that may be approaching water quality standards;
 - (12) a description of the watershed inspection program required pursuant to subsection (b) of section 19-13-B102 of the Regulations of Connecticut State Agencies and the cross connection inspection program required pursuant to subsection (f) of section 19-13-B102 of the Regulations of Connecticut State Agencies, and demonstration of compliance with certification requirements pursuant to sections 25-32-7a to 25-32-14, inclusive, of the Regulations of Connecticut State Agencies;
- (b) An analysis of present and future water supply demands for the five, twenty, and fifty year planning periods, including:
- (1) A description of the present population distribution patterns and population served;
 - (2) data and an evaluation of current and historic water use in each water supply system for the past five years of record, or since the most recent submittal of a water supply plan, including average daily, maximum month and peak day demands and sales to other water companies. Water companies that have this data compiled by user categories shall provide data in that form;
 - (3) a description of local, state and regional land use plans, policies and zoning as related to projected water demands and future service areas;
 - (4) projected water demands for the five, twenty and fifty year planning periods, A 4 including sales to other water companies, based on user categories if data is available, and local land use plans and zoning regulations;
 - (5) an assessment of population changes within existing and future service areas for the five, twenty, and fifty year planning periods using the Office of Policy and Management's most current population data and projections, including an explanation of any deviations thereto and maps depicting the existing and future service areas;

(6) identification of any sources of supply that will no longer be used to meet system demands or any sources of supply to be abandoned;

(7) an analysis of the relationship between available water and average daily demand as determined for the most recent representative period of record not affected by unusual demand conditions such as drought or a significant temporary increase in demand, maximum month demand and peak day demand and the margin of safety to be maintained by the water company currently and for the five, twenty, and fifty year planning periods;

(8) demonstration that the margin of safety is sufficient to meet the water company's current and future needs considering factors such as potential increases or decreases in demand, the time required to bring new sources of supply on line, potential losses of sources of supply or decreased capacities, land area available for development, available interconnections and other factors which may increase or reduce supply or demand;

(9) an analysis of any treatment limitations, water quality concerns, or distribution system limitations and the ability to meet demands currently and for the five, twenty and fifty year planning periods; and

(10) an analysis of any system improvements necessary to minimize the effect of a water supply emergency on critical system components as identified in subdivision (1) of subsection (d) of this section.

(c) An assessment of potential alternative sources of supply, including:

(1) An analysis of alternatives to allow the use of inactive or emergency sources of supply and the safe yield of existing active sources of supply beyond any current limitations in order to meet demands currently and in the five, twenty and fifty year planning periods;

(2) an evaluation of potential new sources of supply and a description of existing state, local and regional land use plans, policies, classifications and zoning as they relate to source development;

(3) identification of potential or historic pollution sources which may affect any new source of supply; and

(4) a demonstration of the ability of the selected alternatives to meet future system demands, including a conceptual implementation plan.

(d) A water supply emergency contingency plan, including emergencies due to contamination of water, power outages, drought, flood or failure of any or all-critical system components. Such water supply emergency contingency plan shall include:

(1) A list identifying critical system components and potential water supply emergencies that may affect them including contamination, power outages, drought, flood or failure, but excluding routine events, such as water main breaks and inoperable valves;

(2) A list identifying significant user groups in commercial, industrial, municipal and residential categories, and discussions of mechanisms of direct technical assistance to these significant quantity user groups.

(3) a description of the level of service to be sustained during water supply emergencies, including identification of priority users, procedures for public notification of priority users, and the means for provision of essential potable water to priority users where priority is based on the potential risk to health, safety and welfare posed by the curtailment of service; and procedures for advance notice to users for which service may be suspended if rationing is required and for implementation of rationing and use bans;

(4) procedures for responding to toxic spills or hazardous materials that may contaminate a watershed or aquifer used for drinking water;

(5) an inventory of equipment needs and availability, including location of existing emergency equipment, generators and spill response materials, identification of additional emergency equipment needs, and procedures for obtaining additional equipment or services;

(6) a list prioritizing emergency sources, including interconnections and independent industrial and commercial water supplies within the service area, and describing contractual, technical and financial requirements for their use, a schedule for activation, available yield and known water quality problems or limitations;

(7) procedures for notification of local, state and federal officials and the public;

(8) a description of duties and responsibilities of key personnel involved in emergency response actions, and a procedure for contacting and scheduling staff;

(9) a description of local ordinances and municipal authority to implement water use restriction.

(10) a description of four stages of response during drought based emergencies, including identification of trigger levels which initiate each stage based on water supply availability and demand situation, reservoir storage levels, or critical operational indicators, including storage tank recovery, pumping capacity, or for ground-water dependent systems, the number of hours of continuous well pump operation. Additional trigger levels may include; precipitation, groundwater, stream flow, and reservoir levels, and also include, the Palmer Drought Severity Index, crop moisture index and fire danger index. The four stages of response shall include: a drought advisory, a drought watch, a drought warning, and a drought emergency. Triggers shall give sufficient lead time to adequately implement response actions. The plan shall include the following stages and actions unless otherwise approved by the department:

(A) a list of actions to be taken in a drought advisory, including contacting the department and affected municipalities, evaluation of emergency source options, schedule for obtaining emergency equipment, implementation of internal measures to maximize use of existing active sources, promotion of voluntary conservation in residential, commercial and industrial facilities to reduce demand by ten percent from previous non-drought average for the appropriate month, preparation for mandatory conservation including necessary enforcement mechanisms, activation of the budget process for funding necessary projects;

(B) a list of actions to be taken in a drought watch, including contacting the department, preparing emergency sources for use, implementation of voluntary conservation to reduce demand by an additional five percent for a total of fifteen percent from previous non- drought average for the appropriate month, coordination with local officials concerning alternative facilities for obtaining water, reevaluation of priority among users and those actions required under previous water supply emergency contingency plan stages;

(C) a list of actions to be taken in a drought warning, including contacting the department, activation of emergency sources upon department approval, institution of mandatory conservation to reduce demand by an additional five percent for a total of twenty percent from previous non-drought average for the appropriate month, initiation of weekly reporting of reservoir water supply status to the department and those actions required under previous water supply emergency contingency plan stages; and

(D) a list of actions to be taken in a drought emergency, including contacting the department, activation of emergency sources upon department approval, institution

of the second phase of mandatory conservation to reduce demand by an additional five percent for a total of twenty-five percent from the previous non-drought average for the appropriate month, coordination with local officials for the provision of emergency services for bathing and obtaining drinking water for the highest priority users, enforcement of measures through local ordinances and state and municipal authorities and those actions required under previous water supply emergency contingency plan stages; and

(11) a signed statement by the water company's chief executive officer attesting to the existence of procedures for sabotage prevention and response. For security and safety reasons, procedures for sabotage prevention and response shall not be submitted for state agency review.

(e) Recommendations for new water system development or system improvements, including:

(1) A conceptual plan for improvements necessary to meet current and projected water demands for the planning periods, to serve current and future service areas, and to minimize the effect of a water supply emergency, limited to improvements for transmission, pumping, emergency power generation, storage and treatment to deliver water to the projected service areas;

(2) identification of improvements in subdivision (1) of this subsection which are anticipated to be implemented in the five year planning period and a proposed schedule for implementation; and

(3) a conceptual implementation plan for the items identified in subdivision (1) of this subsection for the twenty and fifty year planning periods.

(f) A forecast of future land sales that includes a list of the address, associated source of supply and acreage included for each anticipated parcel of land projected to be sold during the five, twenty and fifty year planning periods and other information required by section 25-32d(b)(6) of the Connecticut General Statutes;

(g) A plan for strategic ground water monitoring in conformance with the strategic groundwater monitoring plan required pursuant to section 22a-354aa of the Connecticut General Statutes; and

(h) An analysis of the impact of water conservation practices and a strategy for implementing supply and demand management measures, as follows:

(1) The water conservation plan shall be designed to meet the specific needs of the water supply system for which it is designed. In all cases the plan shall be designed to increase the efficiency of the system, reduce waste and encourage consumer water conservation efforts.

(2) Water conservation plans shall include both demand management and supply management measures and address short and long-term water conservation. The measures that will be implemented and the implementation schedule shall depend on the specific needs of the water supply system and its ability to meet current and future water system needs. There shall be detailed discussion of each water conservation measure which shall include the following:

(A) objective;

(B) assessment of current conditions including deficiencies, if any;

(C) activities and measures taken or to be taken to achieve or maintain the objectives; and

(D) procedures for implementation, including an identification of the groups and agencies which need to be involved.

(3) The demand management section of the water conservation plan shall be designed to reduce peak day demand or average daily demand or both, depending upon the condition of the system, and

shall include at least the following information:

- (A) goals and objectives for demand management;
- (B) strategies to reduce maximum month and peak day demands;
- (C) existing demand management elements including a detailed description of each element with the dates or period of introduction;
- (D) alternative demand management solutions to supply deficiencies, if applicable, including the feasibility of establishing a no demand increase policy for new service connections, which would require potential customers to invest in water saving programs within the existing system which would save the amount of water needed to serve new development;
- (E) a program to provide technical assistance to major users in the performance of water audits and in the formulation and implementation of retrofitting. Such programs shall:
 - (i) provide a list of the current major users with their annual water use for the last year of record in gallons per day, and type of use, prioritizing those which have the greatest potential to conserve water;
 - (ii) describe and evaluate the water audit programs available to the major users, including the following categories of water use: process, sanitary, domestic, heating, cooling and outdoor, for each customer; the areas in which overall efficiency of water use can be improved, and an estimate of water savings if improvements are made;
 - (iii) address recycling, reuse, process changes, replacement or retrofitting, and other efficiency measures; the areas in which peak demands can be reduced and the estimated amount of the reductions; leak detection services which can be offered to consumers; a written report to the customer, with specific recommendations, projected water savings, implementation cost estimates and pay-back period estimates;
 - (iv) report on past program accomplishments since the last water supply plan, including the number of audits performed, and a summary of estimated water use reduction achieved; and
 - (v) describe any additional technical assistance that has been undertaken or is planned;
- (F) plumbing retrofit programs that:
 - (i) briefly describe any residential retrofit program since the last water supply plan; and
 - (ii) describe how water companies that are supply deficient or anticipate development of a new source of supply within the next ten years will investigate ways to encourage residences to retrofit with additional efficient and water-conserving appliances and fixtures and ways to encourage the retrofitting of process and domestic uses of commercial, industrial, and institutional users;
- (G) water rates and pricing information that:
 - (i) discusses the present rate structure; and
 - (ii) assesses rate structure alternatives and frequency of billing to evaluate their anticipated impact on water conservation. Rate structure alternatives to be assessed include: eliminating or consolidating the blocks of existing declining block rate structures; implementing a separate uniform metered rate for each user category or for all consumption by the elimination of declining block rates; minimizing customer service charge that will recover no more than the minimum costs of reading meters, billing of customers, and meter-related costs; implementing seasonally increased rate structures to reduce peak demands; implementing an inclining block structure

for all metered consumption or for each user category; for water companies not regulated by the Department of Public Utility Control, assessing enterprise fund accounting with a program for establishing full-cost pricing and self-sustaining budgets; and

(H) a public education program that:

(i) addresses water conservation for all residential, industrial, commercial, institutional, agricultural, and public authority customers, and evaluates the following components for inclusion: advice to local hydrant users about proper utilization and maintenance of hydrants; bill stuffers; consumer education on self monitoring using home water meters; displays at home shows, fairs, libraries, and town halls; displays or information regarding water efficient plantings and gardening methods and native landscaping; education program for municipal and water company employees; notification to customers with unusually high recorded uses to check for household leaks; newspaper and magazine articles; pamphlets, handbooks, posters, newsletters, and billboards; information to homeowners on more efficient means of watering lawns and ornamental shrubs; speakers on various water conservation topics; and school programs. If there is an existing program, it shall discuss how it can be continued or, if necessary, what improvements should be made in the program;

(ii) describes how the program of public education will be implemented; and

(iii) addresses compliance with sections 25-32k and 25-32l of the Connecticut General Statutes, to provide to residential customers, without charge, educational materials or information on water conservation.

(4) The supply management section of the water conservation plan shall:

(A) state the goals and objectives for supply management;

(B) discuss a meter management program, with the discussion including:

(i) a schedule for one hundred percent source metering in compliance with subsection (n) of section 19-13-B102 of the Regulations of Connecticut State Agencies within five years, if all sources of supply are not currently metered; details on the current source meter reading, testing, calibrating, repair, and replacement program; the adequacy of the metering program and a schedule of activities necessary to correct deficiencies and to achieve source metering objectives; and the extent of metering of other major system components; and

(ii) the extent of consumer metering, plans to expand metering, and the current frequency of meter testing, maintenance and calibration, and the replacement rate; the benefits of metering all individual, residential, commercial, industrial, and public authority customers, if no metering is in place or if there is only partial metering; whether existing meters are of appropriate size and design type; and if meter downsizing should be implemented to reduce lost water;

(C) determine, by means of an annual evaluation of the water supply system, the amount, location, and causes of non-revenue water; discuss the annual water system evaluation process based on the actual evaluation data from the previous five years, or if such data is unavailable, on the most current calendar or fiscal year data; and discuss the results and conclusions of such evaluations and where applicable plans to reduce non-revenue water; and

(D) discuss the current leak detection and repair program and any plans to expand leak detection efforts and plans to reduce water lost from leaks, including the following:

(i) an explanation of the method used for leak detection and description of the sensitivity of the equipment used;

(ii) a discussion based upon the most recent leak detection survey, if one has been performed, of the number of leaks found, the number fixed, the estimated amount of water saved, and the existing leakage rate in gallons per day per mile;

(iii) a discussion of the existing and projected costs of this program and an evaluation of the cost effectiveness of further distribution system rehabilitation to correct sources of lost water; and

(iv) if leak detection and repair objectives have been achieved, a discussion of the planned continuing maintenance program to retain and achieve the lowest leakage rate feasible; and

(E) evaluate the effects that a pressure reducing program would have with respect to water conservation and discuss plans to reduce water losses through pressure reduction.

(5) A five year implementation plan shall be developed providing a schedule and estimated budget for implementing selected demand and supply management measures.

(6) This analysis of the impacts of water conservation practices shall discuss the procedures and criteria to measure the effectiveness of the water conservation measures to be implemented.

(i) Provide an evaluation of source water protection measures. The evaluation shall analyze potential hazards to public drinking water sources of supply. This evaluation shall also, at a minimum, include the following information:

(1) Drinking water sources of supply identified in the 5-year planning period of the approved water supply plan, including all active, emergency, and future drinking water sources of supply;

(2) Identification of critical lands to be protected, in table format, including: number of acres by town for all water company-owned lands; percentage or acreage of land owned or controlled within 200 feet of ground water wells, through easement or other means; number of acres for all source water protection areas; and number of acres of public or privately-owned protected lands located within each source water protection area if known or available;

(3) An inventory of land use activities for each delineated source water protection area, in table format, that are of immediate concern to water quality, or have a significant potential to contaminate a public drinking water supply, as determined by a public water system. Such inventory shall be based on: 1) source water assessment reports developed by the Department of Public Health and; 2) inspection reports or survey data, or both, compiled or maintained by the public water system. The following supportive information shall also be provided:

(A) For each delineated source water protection area: a description and location of inventoried land use activities with significant potential to contaminate; and an assessment as to which of these activities are the most significant regarding the potential to contaminate a public drinking water source of supply.

(B) Description and location of any historic spills, discharges or environmental issues which occurred within the delineated source water protection area, that may affect sources of supply, or are of immediate concern to water quality;

(C) A compilation of untreated water quality data for each source of public drinking water, required under section 19-13-B102(c) of the Regulations of Connecticut State Agencies for the previous five years, and a summary analysis of such data. Test results, if available, for volatile and synthetic organic chemicals shall also be included in the compilation and summary analysis.

(4) A narrative describing:

(A) Land use activities with the most significant potential to contaminate, as assessed and identified in subdivision (3)(A) of this subsection;

(B) Information about plans or programs to reduce potential public health risks for each inventoried land use activity of immediate concern to water quality, to include;

(i) Engineering controls,

(ii) Drinking water source protection management plans,

(iii) Recognized best management practices or other strategies.

(C) Existing state, local, and regional land use plans, policies, classifications and zoning ordinances as they relate to drinking water source protection within the source water protection area; and

(D) The public water system's drinking water source protection program including a discussion of measures to strengthen source water protection within each delineated source water protection area.

(Adopted effective August 10, 2000; amended August 3, 2006)

Sec. 25-32d-4. Calculation of safe yield

(a) **Surface water sources.** Safe yield shall be developed using a mathematical mass balance methodology and shall be based on a ninety-nine percent dry year or a critical dry period with a 1 in 100 occurrence frequency and shall be based on the usable storage capacity of a reservoir which can be used without additional equipment or treatment, except that the safe yield may be less due to requirements for the passing of minimum stream flows or other release requirements. The statistical frequency analysis shall be performed by developing a low flow duration curve using the adjusted stream gaging data for the critical drawdown duration. All surface water safe yield analyses shall be performed by an individual with a minimum of five years experience in surface water analysis and a bachelor's or advanced degree from an accredited college or university in hydrology or related engineering field, or a professional engineer licensed in accordance with Chapter 391 of the Connecticut General Statutes with a minimum of five years experience in surface water analysis. For cases where a mass balance analysis cannot be performed due to insufficient usable storage volume, such as run of the river type situations or diversions, the safe yield shall be determined based upon an analysis of the streamflow for a ninety nine percent dry year assuming a seven day average flow duration. Information developed for other sections of the water supply plan may be referenced, if appropriate. The methodology for determining the safe yield of surface water supplies shall include the following:

(1) Inflow into the reservoir shall be based on gaged streamflow data collected from within the watershed or calculated from measured historical reservoir levels. Where such data is not available, unregulated stream gaged data from another watershed (external) which closely approximates the watershed of interest shall be used as determined by a verification analysis of historic inflows or reservoir levels versus the selected gage. Factors to consider when selecting the external gaging station shall include amount of stratified drift, land uses, slope, stream length, length of record, vegetation and geomorphology. The selected stream gage flow record or historic inflow record shall be of sufficient length and period of record as necessary to perform the required frequency analysis in subdivision (10) of this subsection. In cases where historic reservoir data is insufficient or unavailable for a verification procedure, then the selected gage shall have similar watershed characteristics and worst case low flows.

(2) Operating rules. The operating rules for the movement of water, reservoir conditions, and operation of the reservoir or reservoir system shall be listed and

described. Reservoir conditions shall include the total and usable reservoir storage capacity; top and bottom elevation of the reservoir dam; spillway elevation, length and type; elevations and diameters of water supply intakes; and use of flashboards. Operating rules shall address conjunctive use of multiple reservoirs or wells, diversions, alternate release patterns, and operation of reservoirs in series or parallel. Operating rules shall be utilized in performing safe yield calculations.

(3) Computational interval. The mass balance analysis shall utilize a computational interval of no more than one month. Daily flow analysis may be required to appropriately model flood skimming diversions or low flow diversions unless truncated flow hydrographs are developed.

(4) Diversions. The safe yield analysis model shall include any diversions of water into or out of the watershed. The operating characteristics, flow capacity of the diversions and the runoff to the point of diversion shall be provided. Both existing and proposed diversions shall be analyzed, provided such proposed diversions are identified as needed within the five year planning period.

(5) Withdrawal rates. The reservoir outflow due to water withdrawal shall be varied on a monthly basis, based upon historic withdrawals for the last five year period of record. All supportive data shall be provided.

(6) The safe yield analysis shall be extended to determine the time to refill after the critical dry period assuming normal system operation, annual withdrawal rates equal to the calculated safe yield and inflow from the period immediately following the critical dry period.

(7) The safe yield of surface water sources shall be analyzed as a combined multiple reservoir system based upon a flow routing analysis and specified operating rules, unless previously approved by the department.

(8) Safe yield model inflow.

(A) Developing inflow record. The flow record for the chosen streamflow gage shall be adjusted to the watershed being analyzed by a ratio of the watershed area being analyzed to the watershed area of the selected streamflow gage. Further adjustment may be necessary to calibrate the safe yield model based upon verification procedures.

(B) Verification of safe yield model. In cases where an external stream gage is utilized, the inflow data shall be verified by comparing the end of period storage levels predicted from the chosen streamflow gage record against the actual measured historical reservoir levels from a representative dry period. Operating rules indicated to be in use during the chosen dry period shall be used for the verification procedure.

(C) Period of record. The entire period of record using mass balance methodology shall be analyzed to determine the critical dry period.

(D) Usable storage. The reservoir yield shall be developed using usable storage capacity based on bathymetric or topographic surveys and shall factor in sediment deposition. The calculation of usable storage excludes storage based on flashboards and water that cannot be accessed without special use of pumps or other emergency techniques.

(E) Direct precipitation. Direct precipitation on the surface area of the reservoir shall be calculated using the closest representative precipitation gage for the historic critical dry period or the ninety nine percent exceedance. Published data shall be used where possible. If unpublished data is used the data shall be submitted in support of the analysis. Water companies may choose to use the net impact of the direct precipitation minus the evaporation. The precipitation data shall be based on an interval no greater than one month.

(9) Safe yield model outflow

(A) Evaporation rates. The safe yield analysis shall incorporate monthly evaporation rates computed over the surface area of the reservoir either as calculated at the end of each computational interval or, assuming a constant surface area based upon two-thirds of usable storage capacity. Monthly evaporation rates as listed in this sub-paragraph shall be used in the safe yield analysis:

<u>Evaporation rates (inches per month)</u>	
January	0.85
February	0.93
March	1.51
April	2.15
May	4.15
June	5.10
July	5.61
August	5.25
September	3.64
October	2.60
November	1.66
December	1.34

(B) Consumptive losses to the watershed shall be evaluated.

(C) Dam leakage. Leakage rates shall be based upon field measurements or data obtained from the Department of Environmental Protection. If data is not available, then use of an estimated value is acceptable.

(D) Minimum streamflow releases. The minimum streamflow release shall be determined in accordance with Sections 26-141a-1 through 26-141a-26, inclusive, of the Regulations of Connecticut State Agencies and, where applicable, Sections 22a-365 through 22a-378, inclusive, of the Connecticut General Statutes, and the regulations adopted pursuant to Section 22a-377 of the Connecticut General Statutes. This requirement may be met by dam leakage and required riparian releases which equal or exceed the required minimum releases.

(10) 1 in 100 occurrence frequency. A statistical frequency analysis shall be performed using a Log-Pearson Type III distribution analysis to confirm that the average inflows over the critical drawdown duration equal or exceed a 1 in 100 occurrence frequency. A minimum of thirty years of streamflow record is required, unless otherwise approved by the department. The computed 1 in 100 occurrence frequency flow for the specified critical drawdown duration shall then be compared to the average flows for the same historic period. If necessary to meet or exceed the 1 in 100 occurrence frequency requirement, the inflow record shall be modified by a ratio adjustment and the mass balance analysis shall be rerun accordingly.

(A) All low-flow data used in computing Log-Pearson Type III frequencies shall be non-zero values. If zero values have occurred, then the statistical parameters, such as mean, standard deviation, and skew, shall be adjusted as recommended by the United States Geological Survey in technical memorandum number 89.11, available from the United States Geological Survey.

(B) For critical drawdown durations exceeding three hundred and sixty five days, the data to be used in the frequency analysis shall be non-independent values based upon flow periods equal to the critical drawdown duration within consecutive overlapping years.

(C) If the inflow record utilized in the safe yield analysis exceeds the 1 in 100 occurrence frequency, then, at the water company's option, the inflow record may

be modified by a ratio adjustment to exactly meet but not be under the 1 in 100 occurrence frequency requirement and the mass balance analysis rerun accordingly.

(11) Submittal requirements. The water companies required to submit plans shall submit information on the dam leakage quantities, precipitation, riparian releases, minimum streamflow releases or an indication of exemption to such releases, critical drawdown duration, drought duration, 1 in 100 year low flow value, frequency analysis, safe yield computations including input and output, schematic of the reservoir system and stage or storage tables and curves, and the stage or area tables and curves, for approval. All sources of data used in the safe yield analysis shall be referenced. A summary graph of reservoir storage versus time for the critical dry period and extended to refill shall be submitted.

(b) **Ground water sources.** Safe yield of all active wells shall be computed based upon simultaneous pumping tests of all wells in the wellfield and adjusted for the maximum drawdown available during a critical dry period. The pumping tests shall be performed in accordance with subdivision (3) of this subsection. Ground water safe yield analyses shall be performed by an individual with a minimum of five years experience in ground water analysis in a glaciated geomorphological setting and a bachelor's or advanced degree from an accredited college or university in a ground water related science or related engineering field, or by a professional engineer licensed in accordance with Chapter 391 of the Connecticut General Statutes with a minimum of five years experience in ground water analysis in a glaciated geomorphological setting.

(1) The standard method of adjusting pumping test data to account for the critical dry period shall be based on one of the following:

(A) For all ground water sources, a multiplier of seventy-five percent, equivalent to an eighteen hour pumping day, shall be applied to the pumping test rate. This adjustment factor shall be applied for calculating and making adjustments for the critical dry period. The resulting safe yield shall be reported in units of both gallons per minute, and gallons or million gallons per day. In addition to the critical dry period adjustment factor, an additional multiplier of ninety percent shall be applied to bedrock or consolidated aquifer ground water sources.

(B) Pumping test data shall be analyzed and adjusted for the critical dry period using methodologies appropriate to the hydrogeologic setting and published methodologies as approved by the department. Analytical methodologies shall include steps to:

(i) correct pumping test data for significant ambient water level variations. The corrections shall be based on precipitation and static water level influences observed prior to and during the pumping test;

(ii) analyze impacts from no-flow boundaries, surface waters, existing pumping wells and any other hydrogeologic influences as evidenced by pumping test data;

(iii) project a 180 day pumping event assuming no precipitation recharge;

(iv) use analytical methodologies or modeling techniques to determine safe yield and adjust for the critical dry period. At ungaged sites, regional equations or base-flow measurements, in conjunction with United States Geological Survey Open-File Report 91-244, available from the United States Geological Survey, or Connecticut Water Resources Bulletin Number 34, available from the State of Connecticut Department of Environmental Protection, or other reference deemed comparable by the commissioner, shall be used to estimate the streamflow condition with a seven day duration and a one in ten year recurrence frequency; and

(v) demonstrate that the water levels at the end of the critical dry period shall be maintained above the intakes.

(2) An alternative method for analyzing pumping test data may be made at the water company's option in cases where stabilized water levels are above the pump intake or water levels did not stabilize and predicted water levels are above the pump intake after an extrapolation of drawdown over 180 days of pumping. The alternative method may be used in such cases to indicate the additional yield of the well above the installed pumping capacity at the time of the pumping test and, if stabilization did not occur, show that the aquifer has sufficient storage to sustain pumping at the higher rate during the critical dry period and is intended to indicate the maximum well yield attainable with pump replacement, modification, or increased capacity. The alternate method shall meet the following criteria:

(A) Analytical methodologies or modeling techniques appropriate to the hydrogeological setting and published methodologies as approved by the department shall be applied to predict water levels at the higher pumping rate.

(B) The analysis technique shall take into account mutual interference effects on all wells located in the same wellfield.

(C) Corrections for the critical dry period shall be performed in accordance with sub-paragraphs (A) or (B) of subdivision (1) of this subsection.

(3) Wellfield pumping tests used in determining safe yield shall satisfy the following criteria:

(A) A pumping test shall be conducted with all wells in the wellfield pumping simultaneously to determine time-drawdown characteristics of the pumped wells. The rate of pumping of all wells shall be constant throughout the pumping test. Each well shall be individually metered. For wellfields with more than one well, existing data from individual, non-simultaneous pumping tests of each well in the wellfield that meet the other pumping test requirements may be utilized, provided corrections are made for mutual interference.

(B) Pumping test duration. The pumping test shall be conducted for at least the minimum duration as required in Section 19-13-B51k of the Regulations of Connecticut State Agencies.

(C) Stabilization. Stabilization shall be achieved for the last twelve hours prior to completion of the pumping test. If, after the required pumping test duration, stabilization is not achieved then the pumping test shall be extended, or an analysis and extrapolation of pumping test drawdown versus time data shall be performed to show whether there is sufficient storage in the aquifer to sustain the pumping rate for 180 days of continual operation and maintain water levels above the pump intake. If the projection shows the pump intake would be reached, a reduced pumping rate shall be calculated based on specific capacity at the end of the pumping test such that the pumping level at the reduced rate remains above the pump intake.

(D) Interference effects. The drawdown tests shall run simultaneously for all wells located within the same wellfield unless interference effects can be shown to be minimal or can be properly estimated using analytical methodologies or modeling techniques.

(E) Where contaminants can reasonably be expected to be drawn into the wellfield during the test, the maximum pumping rate may be further limited by the department.

(F) Antecedent conditions

(i) The pumping test shall be conducted following a period of five days during which precipitation does not exceed one-half inch during any twenty-four hour period, and one inch in any seventy-two hour period.

(ii) Precipitation at the site of the pumping test shall be monitored daily beginning one week prior to start-up of pumping through completion of the pumping test,

where applicable, using equipment capable of measuring precipitation to within one hundredth (0.01) of one inch.

(iii) Water level measurements in the pumping well or nearby monitoring wells shall be collected at least daily for at least one week prior to the start of testing.

(iv) For currently developed wells, the wellfield shall be shut down for at least three days prior to the start of testing, unless such shut down is not feasible and the department approves pumping at the minimum possible rate for the background shut down period.

(G) Drawdown measurements. Drawdown in each pumping well shall be measured hourly, or at such frequency that accurately measures drawdown to properly document the trend leading up to stabilization, and as necessary for proper analysis of pumping test data.

(H) Ground water level measurement accuracy. Ground water level measurements shall be obtained with a measuring tape, electric line, or pressure transducer accurate to two one hundredths (0.02) of a foot; unless direct access is not feasible without performing major modifications to the well, then airline readings may be utilized.

(I) Discharge of pumped water. The water withdrawn from the well during a pumping test shall be discharged so as not to interfere with the test.

(J) Surface water levels shall be measured to the nearest two one hundredths (0.02) of a foot and recorded at least twice daily during the duration of the pumping test for all surface water bodies within 500 feet of the pumping well.

(K) The criteria in subparagraphs (A) through (J) of this subdivision shall be used in calculating safe yield, unless the water company demonstrates to the department that any variations from these criteria had no noticeable effect or that the effect can be negated through the use of analytical methods. Induced infiltration tests performed in accordance with subparagraph (B) of subdivision (4) of subsection (d) of Section 22a-354b-1 of the Regulations of Connecticut State Agencies regarding level A mapping are considered to fully meet the pumping test requirements.

(4) Submittal requirements. The following items shall be submitted in support of the calculated ground water safe yield:

- (A) static water level before pumping;
- (B) date, time and duration of pump test;
- (C) pumping rate in gallons per minute;
- (D) drawdown records of time and measured water;
- (E) date, time and amounts of precipitation;
- (F) location of discharge point;
- (G) well driller's log;
- (H) physical well data regarding well construction, screen lengths and intervals, well development and diameter;
- (I) graphs of drawdown or depth to water versus time plotted arithmetically if stabilization was achieved, or plotted on semi-logarithmic paper and extrapolated to 180 days if stabilization was not achieved;
- (J) static water levels without any pumping and stabilized water levels during continuous pumping;
- (K) rated pump capacity and pump curves;
- (L) limitations on pumping, if any;
- (M) other pertinent ground water modeling or testing data if utilized; and
- (N) justification, description and reference information for use of selected methodology.

(c) Where sufficient historical records are available, data on the safe yield of any sources available during a critical dry period may be used if approved by the department.

(1) For existing wells, production records spanning a dry period of low streamflow recharge and below normal precipitation recharge may be used if approved by the department, provided that a sufficient margin of safety is maintained as demonstrated in subdivision (8) of subsection (b) of section 25-32d-3 of the Regulations of Connecticut State Agencies, that a new or expanded source of supply or a new or revised diversion permit is not needed within the five year planning period, and that the well or wells can be shown to have consistently produced the average rate over a multi-year period of record on an annual basis and over the seasonal low water table period extending from July to November. In such cases where historic production records are proposed to be used for calculating groundwater safe yield, the critical period adjustment in subparagraphs (A) and (B) of subdivision (1) of subsection (b) of this section shall be applied.

(2) The average production rate shall be based upon metered production records at each individual source of supply and the approved yield shall not exceed the current installed pump or treatment capacity.

(3) The following data shall be provided to the department:

(A) historic long term production records encompassing a representative dry period, including average day, maximum month average day, and peak day withdrawal rates; and

(B) available information as listed in subdivision (11) of subsection (a) of this section and subdivision (4) of subsection (b) of this section.

(d) Safe yield analyses previously performed that substantially meet the requirements of this section may be submitted in lieu of the study required by this section and shall be reviewed by the department on a case by case basis.

(e) The reduction in safe yield imposed by any constraints such as hydraulic considerations, system losses, treatment limitations, or interference effects shall be considered in the calculation of available water for all active sources.

(f) Other methods may be used provided that they are approved by the Department of Public Health and the Department of Environmental Protection and ensure an adequate water supply.

(Adopted effective August 10, 2000)

Sec. 25-32d-5. Submittal, completeness and approval

(a) Plan submittal

(1) The water company shall submit to the department three copies of the initial plan, revised plan or modified plan.

(2) At the time of plan submittal the water company shall also provide four copies of the initial plan, revised plan or modified plan to the commissioner of Environmental Protection, two copies to the executive secretary of the Department of Public Utility Control, one copy to the secretary of the Office of Policy and Management, and one copy to each regional planning organization covering any portion of the company's existing or proposed source or service area.

(3) The department shall notify each chief elected official, local health official and regional planning organization covering any portion of the company's existing or proposed source or service area of the existence of the plan and the opportunity to comment thereon.

(4) A copy of the initial plan, revised plan or modified plan shall be maintained on file by the water company, at a water company business office located nearest

to the sources of supply and service areas considered in the plan, for review by interested persons during normal business hours. The water company shall notify the department at the time of submission as to the location and hours that the plan is available for public review.

(b) Mechanism for determining plan completeness

(1) The Department of Environmental Protection and the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, shall have sixty days upon receipt of the initial plan, revised plan or modified plan to comment to the department on the completeness of the plan. Failure of either the Department of Environmental Protection or the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, to comment within sixty days shall be deemed acceptance that the plan is complete as submitted.

(2) The commissioner shall notify the water company in writing if a plan is deemed to be incomplete and shall request additional information necessary to deem the plan complete. The schedule for submission of modifications shall be determined by the commissioner.

(3) When the commissioner makes a determination and notifies the water company that the plan is complete, the commissioner shall concurrently send notice of the determination of completeness to the Department of Environmental Protection, the Department of Public Utility Control and the Office of Policy and Management.

(c) Process for plan approval, modification, or rejection

(1) The Department of Environmental Protection and the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, shall have ninety (90) days upon notice that a plan is deemed complete to comment on the plan. In the event that either the Department of Environmental Protection or the Department of Public Utility Control, in the case of any plan which may impact any water company regulated by the Department of Public Utility Control, fails to provide written comments within ninety (90) days, the Department of Public Health shall notify, in writing, both departments of such failure, and in sixty (60) days from issuance of such notice, the Department of Public Health shall make a determination on approval, modification, or rejection of the plan using all available information. If within sixty (60) days following the issuance of such notice, the Department of Public Utility Control or the Department of Environmental Protection provides written comments on such plan, the Department of Public Health shall approve or reject such plan as appropriate based on such comments. If within sixty (60) days of the issuance of the above notice, the Department of Public Utility Control or the Department of Environmental Protection fails to provide written comments on such plan, such department shall upon expiration of such sixty (60) day period issue a letter concurring with such plan and the Department of Public Health shall approve or reject such plan as the Department of Public Health deems appropriate. Notwithstanding the above, the Department of Public Health may reject any plan deemed acceptable to the Department of Public Utility Control and the Department of Environmental Protection.

(2) The department in making a decision to approve, modify or reject a plan shall consider the following:

(A) the ability of the company to provide a pure, adequate and reliable water supply for present and projected future customers;

(B) adequate provision for the protection of the quality of future and existing sources;

(C) comments from state agencies; and

(D) consistency with state regulations and statutes.

(3) Within sixty days after the Department of Environmental Protection and the Department of Public Utility Control, in the case of a water company regulated by that agency, have commented to the department regarding whether a plan should be approved, or in no case more than one hundred and fifty days after written notice that the plan has been deemed complete, the commissioner shall advise the water company whether the plan is rejected, approved or approved with conditions.

(4) If the commissioner fails to approve or reject the plan within the timeframes required by Section 25-32d(c) of the Connecticut General Statutes and this subsection, the plan shall be deemed approved as submitted.

(5) If the commissioner rejects the plan, he shall advise the water company in writing that the plan is being rejected and the reason the plan cannot be approved as submitted.

(6) Appeal procedures. The water company may appeal to the commissioner the department's determination that a plan is not complete or the department's decision to modify or reject a plan, in accordance with Chapter 54 of the Connecticut General Statutes.

(d) **Approved plan distribution.** The company shall submit ten copies of the final approved plan or approved modified pages to the department, which shall distribute copies to the Department of Environmental Protection, the Department of Public Utility Control and the Office of Policy and Management. The company shall submit one copy of the approved plan or approved modified pages to each regional planning organization and notice of the approved plan to all local health departments, and municipal planning departments or agencies, covering any portion of the existing or proposed source or service areas. One copy of the approved plan shall be provided by the water company to any such agency requesting a copy.

(Adopted effective August 10, 2000)

Sec. 25-32d-6. Failure to submit a plan

Any failure to submit a water supply plan in accordance with Sections 25-32d-1a through 25-32d-5, inclusive, of the Regulations of Connecticut State Agencies shall be subject to civil penalties in accordance with Section 25-32e of the Connecticut General Statutes and Section 25-32e-1 of the Regulations of Connecticut State Agencies.

(Adopted effective August 10, 2000)

TABLE OF CONTENTS

Civil Penalties for Violation of Certain Drinking Water Laws

Civil penalties 25-32e-1

Civil Penalties for Violation of Certain Drinking Water Laws

Sec. 25-32e-1. Civil penalties

(a) **Applicability.** These regulations shall apply to each water company as defined by section 25-32a of the Connecticut General Statutes. The term “‘commissioner’” means commissioner of public health or his designated representative.

(b) A water company serving 10,000 or more persons found in violation of one (1) or more of the following provisions of the Connecticut General Statutes or the Regulations of Connecticut State Agencies may be subject to a penalty of \$5000.00 per day per violation. A water company serving fewer than 10,000 persons found in violation of one (1) or more of the following provisions of the Connecticut General Statutes or the Regulations of Connecticut State Agencies may be subject to the penalties indicated in subsection (h) of this section.

(1) Monitoring requirements.

(A) Untreated water monitoring.

As used in section 19-13-B102(c) of the Regulations of Connecticut State Agencies.

(B) Water ready for consumption monitoring.

As used in sections 19-13-B102(e)(1) through 19-13-B102(e)(10) of the Regulations of Connecticut State Agencies.

(C) Source meter reading, reservoir, groundwater source and water use monitoring.

As used in section 19-13-B102(n) of the Regulations of Connecticut State Agencies.

(2) Reporting requirements.

(A) Watershed survey.

As used in section 19-13-B102(b) of the Regulations of Connecticut State Agencies.

(B) Reporting test results.

As used in section 19-13-B102(h) of the Regulations of Connecticut State Agencies.

(C) Reporting reservoir status, groundwater status, and water use.

As used in section 19-13-B102(n) of the Regulations of Connecticut State Agencies.

(D) Cross connection reporting.

As used in section 19-13-B102(f)(2) of the Regulations of Connecticut State Agencies.

(E) Public notification.

As used in section 19-13-B102(i) of the Regulations of Connecticut State Agencies.

(3) Water supply plan requirements.

(A) Submitting water supply plan.

As used in section 25-32d of the Connecticut General Statutes.

(B) Revising water supply plan.

As used in section 25-32d-1a et seq. of the Regulations of Connecticut State Agencies.

(4) Water quality requirements.

(A) Standards for quality of untreated water prior to treatment.

As used in section 19-13-B102 (c) of the Regulations of Connecticut State Agencies.

(B) Water ready for consumption.

As used in sections 19-13-B102(e)(1) through 19-13-B102(e)(6), 19-13-B102(e)(7)(L) and 19-13-B102(e)(7)(M) of the Regulations of Connecticut State Agencies.

(C) Treatment techniques.

As used in sections 19-13-B102(j) of the Regulations of Connecticut State Agencies.

(5) Operator certification and backflow prevention requirements.

(A) Requirement for certified operators at all community water systems (CWS) and non-transient non-community (NTNC) treatment plants, as used in section 25-32-9(a) of the Regulations of Connecticut State Agencies.

(B) Requirement for certified operators at all CWS and NTNC distribution systems that serve over 1000 persons, as used in section 25-32-11(a) of the Regulations of Connecticut State Agencies.

(C) Requirement to have devices tested by a person who has met the requirements of section 25-32-11(e) of the Regulations of Connecticut State Agencies, as used in sections 19-13-B38a(f)(6) and 19-13-B38a(f)(7) of the Regulations of Connecticut State Agencies.

(D) Requirement to have consumer premises inspected by a person who has met the requirements of section 25-32-11(h) of the Regulations of Connecticut State Agencies, as used in section 19-13-B102(f)(3) of the Regulations of Connecticut State Agencies.

(6) Permits and approval requirements.

(A) Application for a permit as used in section 25-37d-1 of the Regulations of Connecticut State Agencies.

(B) Submission of plans and specifications for approval of water system improvements as used in sections 19-13-B80 and 19-13-B102(d)(2) of the Regulations of Connecticut State Agencies.

(7) Water supply capacity and sufficiency.

Requirement to meet the water supply capacity and sufficiency as used in sections 19-13-B102(o) and 19-13-B102(p) of the Regulations of Connecticut State Agencies.

(c) Notice of violation.

When the commissioner determines that a violation of any provision of the Connecticut General Statutes or regulations referenced in subsection (b) or (h) of this subsection has occurred or is occurring, the commissioner may so notify the violator and may impose a civil penalty in accordance with section 25-32e of the Connecticut General Statutes and section 25-32e-1 of the Regulations of Connecticut State Agencies, if compliance is not achieved by the date specified in the notice of violation.

(d) Establishment of civil penalty.

In setting a civil penalty in a particular case, the commissioner shall consider all factors which he deems relevant, including, but not limited to those listed in section 25-32e of the Connecticut General Statutes.

(e) Total penalty assessment calculation.

(1) The amount of the total penalty assessment may be calculated by adding all the applicable penalties specified in subsection (b) or (h) of this section for every violation.

(2) Each day the violation continues may constitute a separate violation, and the total penalty assessment may be calculated as the product of the number of days the water company is in violation and the amount calculated under subsection (b) or (h) of this section.

(3) In setting a civil penalty for a violation, the commissioner shall consider relevant factors, including but not limited to those indicated in subsection (d) of this section and may as a result of considering these factors, adjust the total civil penalty calculated pursuant to subsections (e) (1) and (2) of this section.

(4) The commissioner shall not levy a civil penalty under this section if the owner or operator proves to the commissioner's satisfaction that the violation was caused by strikes or lockouts; riots, wars, or other acts of violence; floods, hurricanes or other Acts of God; or other equally severe, unforeseeable accidents the results of which were unavoidable and uncorrectable, where such acts or events were occasioned directly upon the owner or operator.

(f) Appeals.

(1) A water company in receipt of a notice of violation issued pursuant to section 25-32e of the Connecticut General Statutes may petition the commissioner for a hearing to contest the determination that a violation occurred, the determination a violation has not been corrected, the initial date of the imposition of the penalty, and the imposition of a penalty within twenty days after such notice is sent by the commissioner, pursuant to section 25-32e of the Connecticut General Statutes.

(2) Any water company aggrieved by an adverse determination in a final order of the commissioner may appeal as set forth in section 25-32e of the Connecticut General Statutes.

(g) Record of adjustment.

The commissioner shall maintain a record of each instance he adjusts a civil penalty pursuant to subsection (f) of this section. The record shall include the name and address of the violator, the amount of the penalty before and after adjustment, and the reasons for adjustment.

(h) Schedules of penalties.

The following schedules of maximum penalties shall be used by the department to calculate penalties.

(1) Monitoring requirements

Any water company serving fewer than 10,000 persons which fails to fulfill a monitoring requirement on or before the established compliance date or fails to provide results from an appropriately certified laboratory or certified operator as required may be found by the commissioner to be in violation of one or more of the provisions of the Regulations of Connecticut State Agencies. Each individual monitoring requirement that is not satisfied at the frequency required for such water company shall be considered a separate violation and may be subject to the applicable penalties per day, per violation indicated below:

(A) Testing for bacteria	\$ 100
(B) Testing for all physical parameters	60
(C) Testing for a single physical parameter	30
(D) Testing for all inorganic chemicals	1,000
(E) Testing for a single inorganic chemical parameter	100
(F) Testing for all pesticides, herbicides and PCBs	5,000
(G) Testing for a single pesticide, herbicide or PCB	1,000
(H) Testing for all organic chemicals	2,000
(I) Testing for a single organic chemical parameter	500
(J) Testing for all radiological parameters	1,000
(K) Testing for a single radiological parameter	500
(L) Testing for free chlorine residual	30
(M) Testing for corrosion control chemicals	70

- (N) Reading source meter 50
- (O) Monitoring reservoir 75
- (P) Monitoring ground water source 75
- (Q) Monitoring water use 75
- (2) Reporting requirements

Any water company serving fewer than 10,000 persons which fails to fulfill a reporting requirement on or before the established compliance date may be found by the commissioner to be in violation of one or more of the provisions of the Regulations of Connecticut State Agencies. Each individual reporting requirement that is not satisfied at the frequency required for such reporting requirement shall be considered a separate violation and may be subject to the applicable penalties per day, per violation indicated below:

- (A) Submitting watershed survey \$ 5000
- (B) Submitting test results 100
- (C) Submitting reservoir status report 50
- (D) Submitting ground water status report 50
- (E) Submitting water use report 25
- (F) Submitting cross-connection report 5000
- (G) Making public notice 1000

(3) Water supply plan requirements

Any water company serving fewer than 10,000 persons which fails to submit or revise a water supply plan on or before the established compliance date, may be found by the commissioner to be in violation of one or more of the provisions of the Regulations of Connecticut State Agencies and may be subject to the applicable penalties per day, per violation indicated below:

- (A) Submitting water supply plan \$ 5000
- (B) Revising water supply plan 1000
- (4) Water quality requirements

Any water company serving fewer than 10,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 19-13-B102(c), 19-13-B102(e)(1) through 19-13-B102(e)(6), 19-13-B102(e)(7)(L), 19-13-B102(e)(7)(M) and 19-13-B102(j) of the Regulations of Connecticut State Agencies may be subject to a maximum penalty of \$5,000.00 per day per violation.

(5) Certified operator requirements

(A) Any water company serving 3,300 or more persons, and fewer than 10,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of section 25-32-9(a) and 25-32-11(a) of the Regulations of Connecticut State Agencies, may be subject to a maximum penalty of \$2500.00 per day per violation.

(B) Any water company serving 1,000 or more persons, and fewer than 3,300 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 25-32-9(a) and 25-32-11(a) of the Regulations of Connecticut State Agencies, may be subject to a maximum penalty of \$1000.00 per day per violation.

(C) Any water company serving 25 or more persons, and fewer than 1,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 25-32-9(a) and 25-32-11(a) of the Regulations of Connecticut State Agencies, may be subject to a maximum penalty of \$500.00 per day per violation.

(6) Backflow prevention requirements.

Any water company serving fewer than 10,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 25-32-9(a), 25-32-11(a), 25-32-11(e), 25-32-11(h), 25-32-12(a), 19-13-B38a(f)(6), 19-13-B38a(f)(7) and 19-13-B102(f)(3) of the Regulations of Connecticut State Agencies may be subject to a maximum penalty of \$5,000.00 per day per violation.

(7) Permits and approval requirements.

Any water company serving fewer than 10,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 19-13-B80, 19-13-B102(d)(2) and 25-37d-1 of the Regulations of Connecticut State Agencies may be subject to a maximum penalty of \$5,000.00 per day per violation.

(8) Water supply capacity and sufficiency.

Any water company serving fewer than 10,000 persons which is found by the commissioner to be in violation of one (1) or more of the provisions of sections 19-13-B102(o) and 19-13-B102(p) of the Regulations of Connecticut State Agencies may be subject to a maximum penalty of \$5,000.00 per day per violation.

(Effective August 23, 1994; amended October 26, 2001, December 5, 2002)

TABLE OF CONTENTS

Program of Loans and Grants to Private and Municipal Water Companies

Purpose and definitions 25-33b-1

Loans to investor-owned and municipally-owned water companies. . . 25-33b-2

Grants to municipally-owned water companies 25-33b-3

Grants to investor-owned and municipally-owned water companies for
potable water 25-33b-4

Emergency assistance grants to investor-owned water companies where
equipment or facility failure has resulted in failure to provide water 25-33b-5

Program of Loans and Grants to Private and Municipal Water Companies

Sec. 25-33b-1. Purposes and definitions

(a) Purpose.

The purpose of these regulations is to implement the provisions of the following sections of the General Statutes: 25-33a, 25-33b and 22a-471, as amended, establishing a program of loans to investor-owned and municipally owned water companies and grants to municipally-owned water companies for the planning, design, modification or construction of drinking water facilities necessary to enable these companies to comply with the Federal Safe Drinking Water Act of 1974 or with an order of the Department of Health Services deeming the water supplies by such companies to be inadequate and establishing a program of grants to water companies which have less than ten thousand customers and which own, maintain, operate, manage, control or employ a water supply well which is rendered unusable for potable drinking water. Section 25-33a, of the Connecticut General Statutes, also provides for emergency assistance grants to investor-owned water companies where facility or equipment failure has caused the company to be unable to provide water.

(b) Definitions

(1) "Commissioner" shall mean the commissioner of the Department of Economic Development.

(2) "Safe Water Act" shall mean the Federal Safe Drinking Water Act of 1974.

(3) "Applicable order of the Department of Health Services" shall mean an order of the Department of Health Services deeming the water supplied by a municipally-owned or investor-owned water company to be inadequate.

(4) "Authority" shall mean the Connecticut Development Authority.

(Effective April 27, 1987)

Sec. 25-33b-2. Loans to investor-owned and municipally-owned water companies

(a) Standards for eligibility

(1) In order to be eligible for assistance under the drinking water facilities loan program, an applicant must demonstrate that:

(A) Either it is an investor-owned water company which supplies water to at least 25 but less than 10,000 customers or it is a municipally-owned water company; and

(B) It is subject to either the provisions of the Safe Water Act or an applicable order of the Department of Health Services.

(2) The proceeds of each loan are to be applied by the water company to pay the costs of the planning, design, modification or construction of drinking water facilities which are approved by the Commissioner of Health Services as necessary and appropriate to enable the water company to comply with the Safe Water Act or an applicable order of the Department of Health Services. Planning costs shall include, but need not be limited to, fees and expenses of architects, engineers, attorneys, accountants and other professional consultants, and costs of preparing surveys, studies, site plans and plans and specifications for eligible drinking water facilities. A portion of the loan proceeds may be applied by the applicant to the reasonable costs of procuring the loan.

(3) Loans will be made in amounts as determined by the Commissioner.

Each loan will

(A) have a term not in excess of thirty years;

(B) bear interest at a rate of 1% above the interest cost borne by the State with respect to its most recent issue of general obligation bonds;

(C) be repaid in regular periodic installments throughout its term; and

(D) be subject to prepayment without penalty at any time.

(b) **Procedures for determining eligibility and awarding loans**

(1) Applications shall be made on forms prescribed by the Commissioner, accompanied by a preliminary cost certificate setting forth the estimated costs of the eligible drinking water facilities. Each loan shall be authorized by the authority or, if the authority so determines, by a committee of the authority consisting of the chairman and either one other member of the authority or its executive director. The authority shall charge reasonable application and other fees to be applied to the administrative expenses incurred in carrying out the provisions of Conn. Gen. Stat. § 25-33a, to the extent such expenses are not paid by the authority or from monies appropriated to the Department of Economic Development.

(2) The Commissioner will issue commitments to make loans after determining from each application and performing such other inquiries and investigations as he deems appropriate in the circumstances that the applicant meets the criteria for eligibility set forth in § 25-33b-2 (a) of these regulations. Each commitment will specify the amount of the loan the Commissioner commits to make and the period for which the commitment will be valid, taking into consideration the construction schedule and completion date for the eligible drinking water facilities estimated by the Commissioner of Health Services. Each commitment will also set forth such other terms and conditions as are established by the Commissioner for the loan.

(3) The Commissioner will disburse each loan upon receipt of a final cost certificate from the water company accompanied by an independent public accountant's opinion with respect thereto, together with confirmation by the Commissioner of Health Services that the planning, design, modification, or construction of eligible drinking water facilities has been completed satisfactorily by the water company and that the water company is or will be in compliance with the Safe Water Act or an applicable order of the department of health services. The loan will be evidenced by the promissory note of the water company and the water company will also deliver an opinion of counsel as to matters relating to the loan

(4) All proceeds from the repayment of interest and principal on any loan authorized by Conn. Gen. Stat. § 25-33a-(1), after payment therefrom of any loan correspondent's service fees property chargeable thereto, shall be paid to the state treasurer for deposit in a fund designated "Investor-owned Water Companies' Revolving Fund." Such fund shall be used to make loans authorized by Conn. Gen. Stat. § 25-33a (1).

(5) Loan commitments will terminate on the date specified in the loan commitment. In the event of a termination the amount segregated under the loan commitment for the benefit of a water company will again become available for commitment under the drinking water facilities loan program. The Commissioner may, in his discretion and as necessary to effect the purposes of Conn. Gen. Stat. § 25-33a (1), extend the commitment period to take account of construction delays or any other factors which may warrant an extension in particular cases.

(Effective November 9, 1983)

Sec. 25-33b-3. Grants to municipally-owned water companies

(a) **Standards for eligibility**

(1) In order to be eligible for assistance under the drinking water facilities grant program, an applicant must demonstrate that it is a water company owned by a Connecticut municipality.

(2) The proceeds of each grant are to be applied by the municipally-owned water company to pay the necessary and appropriate costs of planning, design, modification or construction of such drinking water facilities which are required to enable the company to comply with the Safe Water Act or an applicable order of the Department of Health Services. The necessity and appropriateness of the planned drinking water facilities will be approved by the Commissioner of Health Services. Planning costs include, but are not limited to, fees and expenses of architects, engineers, attorneys, accountants and other professional consultants, and costs of preparing surveys, studies, site plans and plans and specifications for eligible drinking water facilities.

(b) Procedures for determining eligibility and awarding grants

(1) Applications will be made on forms prescribed by the Commissioner, accompanied by a cost certificate setting forth the estimated eligible drinking water facilities costs and confirmation by the Commissioner of Health Services that the planned drinking water facilities are necessary. Each grant shall be authorized by the Connecticut Development authority or, if the authority so determines, by a committee of the authority consisting of the chairman and either one other member of the authority or its executive director. The Connecticut Development authority shall charge reasonable application and other fees to be applied to the administrative expenses incurred in carrying out the provisions of Conn. Gen. Stat. § 25-33a, to the extent such expenses are not paid by the authority or from monies appropriated to the Department of Economic Development.

(2) The Commissioner will evaluate each application and make such inquiries as it deems appropriate in the circumstances in order to determine that the applicant meets the criteria for eligibility set forth in § 25-33b-3 (a) of these regulations. Grants will be awarded upon the favorable conclusion of the Commissioner's evaluation and inquiry.

(3) Payment of grant funds may be made as a whole or in lots either in advance of, concurrently with, or in reimbursement to the municipality for the expenditure of amounts for qualified expenses, in each case as the Commissioner determines to be appropriate. In any event, grant funds will be disbursed in a manner which discourages applicants from seeking payment prior to the times moneys are actually required so as to obtain investment earnings on such moneys.

(4) The amount of any grant shall not exceed one hundred thousand dollars or thirty percent of the cost of the project being funded by the grant, whichever is greater.

(Effective November 9, 1983)

Sec. 25-33b-4. Grants to investor-owned and municipally-owned water companies for potable water

(a) Standards for eligibility.

In order to be eligible for assistance under this section, an applicant must demonstrate:

(1) It is a water company, as defined in Section 25-33a of the General Statutes, which has less than ten thousand customers and owns, maintains, operates, manages, controls or employs a water supply well which is rendered unusable for potable drinking water; and

(2) That the Commissioner of Health Services has stated in writing that the extent of pollution creates or can reasonably be expected to create an unacceptable risk of injury to the health or safety of persons using such groundwaters as a public or private source of water for drinking or other personal or domestic uses; and

(3) That the Commissioner of the Department of Environmental Protection has stated in writing that he is unable to determine the person or municipality responsible

for rendering the groundwaters unusable for potable drinking water or he determines that the responsible persons have no assets other than land, buildings, business machinery or livestock and are unable to secure a loan at a reasonable rate of interest to provide potable drinking water; and

(4) That the applicant has prepared an engineering report in accordance with all of the applicable requirements specified in Section 22a-471-1 (f) (1) of the Regulations of Connecticut State Agencies which has been approved by the Commissioners of Environmental Protection and Health Services.

(b) Grant application procedures.

(1) Application. A water company may apply for state funding assistance for up to fifty percent of the cost of the engineering report and for up to fifty percent of the cost of the most cost effective long term method of rendering the water supply in question usable for potable drinking water. An application for grant assistance shall be on a form prescribed by the Commissioner and shall include but not be limited to:

(A) Evidence to support the eligibility requirements specified in subsection (a);

(B) A detailed description of the most cost effective long term method, as determined by the Commissioners of Environmental Protection and Health Services, of rendering the water supply in question usable for potable drinking water.

(2) Upon submittal of all required information deemed necessary by the Commissioner, the application for reimbursement of engineering report costs and for financial assistance in providing the long term method of rendering the water supply usable for potable drinking water shall be processed in accordance with either subsections (c) or (d) of this section, as appropriate.

(c) Grants from the Emergency Spill Response Fund.

If the Commissioner of Environmental Protection, in accordance with section 22a-471 (b) (2) (A) of the general statutes, as amended by public act 85-407, determines that it is appropriate to make a grant to the water company from the Emergency Spill Response Fund, established by Section 22a-451, as amended, then the Commissioner shall transfer all grant application material to the Commissioner of Environmental Protection and award of any grant will, thereafter, be made in accordance with Section 22a-471-1 of the Regulations of Connecticut State Agencies.

(d) Grants approved by the authority.

(1) Each grant for an engineering report and long term method of rendering the water supply usable for potable drinking water shall be authorized by the Connecticut Development authority or, if the authority so determines, by a committee of the authority consisting of the chairman and either one other member of the authority or its executive director. The Connecticut Development authority shall charge reasonable application and other fees to be applied to the administrative expenses incurred in carrying out the provisions of Section 25-33a of the General Statutes, to the extent such expenses are not paid by the authority or from monies appropriated to the Department of Economic Development.

(2) The Commissioner will evaluate each application and make such inquiries as he deems appropriate in the circumstances in order to determine that the applicant meets the applicable criteria for eligibility set forth in Sections 25-33b-4 (a) and (b), of these regulations. Grants will be awarded upon the favorable conclusion of the Commissioner's evaluation and inquiry.

(3) Payment of grant funds may be made as a whole or in lots either in advance of, concurrently with, or in reimbursement to the water company for the expenditure of amounts for qualified expenses, in each case as the Commissioner determines to

be appropriate. In any event, grant funds will be disbursed in a manner which discourages applicants from seeking payment prior to the times moneys are actually required so as to obtain investment earnings on such moneys.

(e) If a water company receives funding from any other source or is compensated by a person who or municipality which is responsible for rendering the groundwaters unusable for potable drinking water, then the grants under this section shall be adjusted in accordance with subparagraphs (A) and (B) of Section 22a-471 (b) (3) of the General Statutes, as amended.

(Effective June 27, 1986)

Sec. 25-33b-5. Emergency assistance grants to investor-owned water companies where equipment or facility failure has resulted in failure to provide water

(a) Standards for Eligibility.

In order to be eligible for assistance under this section, an applicant must demonstrate that:

(1) It is an investor-owned water company which supplies water to at least 25 but less than 1,000 customers.

(2) The company is unable to provide water to its customers as a result of equipment or facility failure.

(3) The company has received a written recommendation from the Department of Health Services in consultation with the Department of Public Utility Control regarding the company's eligibility to file an application for an emergency grant.

(4) The company is financially unable to immediately restore service and there is no alternative water company reasonably able to immediately supply water.

(5) The company is not under orders by the Department of Health Services and/or the Department of Public Utility Control to correct problems related to the equipment or facility failure for which emergency grant funds are requested.

(b) Grant Application Procedures.

(1) Application forms shall be provided by the Department of Economic Development and shall be accompanied by a written recommendation of the Department of Health Services.

(2) Upon receipt, review, and approval of all required information identified in Sec. 25-33b-5 (a) deemed necessary by Commissioner, a grant may be made for eligible repair, rehabilitation, interconnection or replacement costs.

(Effective April 27, 1987)

TABLE OF CONTENTS

Connecticut Plan for Public Water Supply Coordination

Coordinated water system plans 25-33h-1

Connecticut Plan for Public Water Supply Coordination

Sec. 25-33h-1. Coordinated water system plans

(a) Definitions

(1) “Areawide supplement” means a part of a coordinated water system plan which addresses areawide water system concerns pertaining to the public water supply management area which are not otherwise included in each water company’s individual water system plan. The supplement identifies the present and future water system concerns, analyzes alternatives and sets forth a means for meeting those concerns. An areawide supplement consists of a water supply assessment, exclusive service area boundaries, integrated report, and executive summary.

(2) “Commissioner” means the commissioner of the Connecticut department of health services.

(3) “Coordinated water system plan” or “coordinated plan” means (a) the individual water system plans of each public water system within a public water supply management area, filed pursuant to section 25-32d of the Connecticut General Statutes, and (b) an areawide supplement to such plans developed pursuant to public act 85-535 which addresses water system concerns pertaining to the public water supply management area as a whole.

(4) “Department” means the Connecticut department of health services or any duly authorized representative thereof.

(5) “Exclusive service area” means an area where public water is supplied by one system.

(6) “Municipal planning commission” means the municipal planning or planning and zoning commission established under general enabling act or special act.

(7) “Public water supply management area” or “management area” means an area for coordinated water supply planning determined by the commissioner of health services to have similar water supply problems and characteristics.

(8) “Public water system” means any private, municipal or regional utility supplying water to fifteen or more service connections or twenty-five or more persons.

(9) “Regional planning agency” means regional planning agencies as defined in section 8-31a through 8-37b of the Connecticut General Statutes, regional councils of elected officials as defined in section 4-124c through 4-124h of the Connecticut General Statutes, where such councils have undertaken to exercise the powers of a regional planning agency and regional councils of governments as defined in section 4-124i through 4-124p of the Connecticut General Statutes.

(10) “Satellite management” means management of a public water supply system by another public water system.

(11) “Shared” or “joint use facility” means water supply facilities, source of supply or equipment developed, funded, managed, owned or utilized by two or more public water systems.

(12) “User category” means metered residential, metered commercial, metered industrial, metered public authorities, unmetered residential, unmetered commercial, unmetered industrial, unmetered public authorities, and nonrevenue water. Residential shall include apartments and condominiums.

(13) “Water utility coordinating committee” or “WUCC” means a committee consisting of one representative from each public water system with a source of supply or service area within the public water supply management area and one representative from each regional planning agency within the public water supply management area, elected by majority vote of the chief elected officials of the municipalities that are members of such regional planning agency.

(b) Initiation of the Planning Process

(1) The commissioner of health services, in consultation with the department of public utility control, the commissioner of the department of environmental protection and the secretary of the office of policy and management, shall delineate the preliminary boundaries of public water supply management areas and establish preliminary priorities for initiation of the planning process in accordance with the schedule established in public act 85-535.

(2) In accordance with the schedule established in public act 85-535, the commissioner shall delineate the final public water supply management area boundaries and establish final priorities for initiation of the planning process.

(3) After establishing final priorities, the commissioner shall convene in priority order a WUCC for each management area to implement the planning process.

(4) The department may enter into contracts with consultants to provide services to the WUCC in preparing the coordinated water system plan.

(5) The commissioner shall convene a WUCC by publishing a legal notice in the Connecticut newspaper having the largest daily circulation in the management area stating date, time and place of meeting and eligibility requirements for membership. Based on the department's currently available records, the department shall also mail a notice to each eligible WUCC member as defined in subdivision (6).

(6) Eligible WUCC members are as follows:

(A) One representative of each public water system which has either:

(i) A source of supply within the management area which is a source of potable water approved by the department, including reservoirs, wells, other water bodies and associated watershed land, or

(ii) A service area within the management area including areas where service is currently provided to customers or where a public water system has the authority to provide such service as determined by legal rights such as legislative franchises, municipal charters, or interlocal agreements for the sale of water.

(B) One representative of each regional planning agency serving at least one municipality within the management area as elected by majority vote of the chief elected officials of the municipalities that are members of such regional planning agency.

(7) The department shall maintain and make available the list of eligible WUCC members developed pursuant to subdivision (6). Any regional planning agency or public water system which is not included on the membership list for a WUCC may petition the department to be included. Such petition shall include the following:

(A) Name and mailing address of the public water system or regional planning agency making the request;

(B) The management area in question; and

(C) A statement of basis for membership.

(8) Once a WUCC has been convened in an area, it is the department's responsibility to inform new public water systems which come to the department's attention of the existence of the WUCC and their eligibility.

(c) Responsibilities of the WUCC

(1) A WUCC shall meet in each public water supply management area to prepare a coordinated water system plan. The coordinated water system plan shall include the individual water system plan of each public water system within the management area, required pursuant to section 25-32d of the Connecticut General Statutes, and an areawide supplement that addresses areawide water system concerns pertaining

to the management area which are not otherwise included in each water company's individual water system plan.

(2) The WUCC shall implement the planning process established in public act 85-535. The planning process shall maximize efficient and effective development of public water supply systems and promote public health, safety and welfare.

(3) The work plan, meeting schedule, and committee rules and procedures shall be adopted by the WUCC as required. After the initial meeting convened by the commissioner, meetings of the WUCC shall be convened on a schedule determined by the WUCC which facilitates maximum participation of eligible members.

(4) The WUCC shall publish meeting times and agendas, and shall record and make available for public inspection minutes of meetings.

(5) Prior to beginning work on the water supply assessment, the WUCC shall provide notice to all eligible WUCC members, municipalities within the management area, and other interested persons that a preliminary assessment of water supply conditions and problems within the public water supply management area is being undertaken.

(6) Prior to beginning work on the exclusive service area boundaries, the WUCC shall also provide notice to all eligible WUCC members within the public water supply management area that preliminary exclusive service area boundaries are being developed and of their ability to participate.

(7) The WUCC shall solicit public comment and document responses to comments. The public comment period shall be a minimum of 30 days.

(d) Contents of the Coordinated Water System Plan

The coordinated water system plan shall include, but not be limited to, the following:

(1) The individual water system plan of each public water system within a public water supply management area, required to file such plan pursuant to section 25-32d of the Connecticut General Statutes; and

(2) An areawide supplement that shall address areawide water system concerns pertaining to the public water supply management area which are not otherwise included in each water company's individual water system plan. The areawide supplement consists of a water supply assessment, exclusive service area boundaries, integrated report, and executive summary. The areawide supplement shall include at least the following:

(A) Water Supply Assessment

A water supply assessment shall be developed to evaluate water supply conditions and problems within the public water supply management area. The WUCC shall prepare a preliminary and then a final water supply assessment. The water supply assessment shall be a factual and concise report including at least the following topics as they relate to public water systems in the public water supply management area:

(i) Description of existing water systems, including

(aa) History of water quality, reliability, service, and supply adequacy;

(bb) General fire fighting capability of the utilities; and

(cc) Identification of major facilities which need to be expanded, altered, or replaced.

(ii) Availability and adequacy of any future water source(s).

(iii) Existing service area boundaries and public water system limits established by statute, special act or administrative decision, including a map of established boundaries, and identification of systems without boundaries.

(iv) Present and projected growth rates, including population data, land use patterns and trends, and identification of lands available for development.

(v) Status of water system planning, land use planning and coordination between public water systems.

(B) Exclusive Service Area Boundaries

Based on the final water supply assessment, the WUCC shall establish exclusive service area boundaries within the management area delineating each public water system's future service area. The WUCC shall prepare preliminary and then final exclusive service area boundaries.

(i) In establishing exclusive service area boundaries, the WUCC shall:

(aa) Allow utilities to maintain existing service areas;

(bb) Not leave areas as unserved islands, unless it can be demonstrated that there is not and will be no future need for public water service; and

(cc) Not allow new service areas or main extensions which create duplication or overlap of services.

(ii) The following factors shall be utilized in determining exclusive service area boundaries:

(aa) Existing water service area;

(bb) Land use plans, zoning regulations, and growth trends;

(cc) Physical limitations to water service;

(dd) Political boundaries;

(ee) Water company rights as established by statute, special act or administrative decisions;

(ff) System hydraulics, including potential elevations or pressure zones; and

(gg) Ability of a water system to provide a pure and adequate supply of water now and into the future.

(iii) A plan for exclusive service areas within the public water supply management area shall be developed, including:

(aa) A map or maps at a scale of 1:50,000 depicting existing and future service areas within the exclusive service area boundaries.

(bb) A reference list of existing service area or supply agreements between public water systems or localities, including charter or enabling act revisions as applicable and a brief description of terms of agreement including dates and length of agreement.

(cc) Description of future service area boundaries.

(C) Integrated Report

An integrated report shall be developed which provides an overview of individual public water systems within the management area; addresses areawide water supply issues, concerns, and needs; and promotes cooperation among public water systems.

The integrated report shall contain at least the following:

(i) An areawide overview which integrates individual water system plans. This should include at least the following:

(aa) Population and consumption projections for 5, 20 and 50 year planning periods for the public water supply management area as a whole and for each municipality within the area.

(bb) Projected population, historical and projected water demand by user category for 5, 20 and 50 year planning periods for each public water system's exclusive service area and for the combined service areas.

(cc) Sources of supply, safe yield and amounts of purchased water available for 5, 20, and 50 year planning periods for each public water system's exclusive service area and for the combined service areas.

(dd) Determination of the amount and percentage of projected population within each municipality within the public water supply management area to be serviced by public water supplies for 5, 20 and 50 year planning periods.

(ee) Identification of areas not within exclusive service area boundaries and discussion of water supply alternatives. Attention should be given to existing and potential water quality problems, supply availability, population projections, and development potential.

(ii) Discussion of the relationship and compatibility of the coordinated water system plan with proposed or adopted land use plans and growth policies, as reflected in local, regional and state plans. Consideration should be given to both protection and development of public water supply sources and to availability of public water service.

(iii) Evaluation and identification in priority order of alternative water sources recommended to supply future areawide water system needs. Include appropriate ground or surface water studies, safe yield estimates and arrangement for development and delivery of the water supply.

(iv) Plans for any necessary interconnection of both raw and treated water between public water systems for both daily and emergency water supply use, which shall include:

(aa) A list and description of existing and future interconnections. Specify legal, technical and financial requirements for use and any source, hydraulic or contractual limitations for use. Identify source of supply, size, location, operating controls and management. Include a schedule for facility development, noting limitations to proposed development, and a schedule for negotiation of any new contract or renewal for sale or purchase of water.

(bb) Assessment of the need for and impact of potential interconnections between public water supply systems within the management area and with adjacent public water supply management areas.

(cc) Discussion and assessment of water quality compatibility between interconnections.

(v) A plan for joint use, management or ownership of services, equipment, or facilities, including:

(aa) A list of existing and planned shared or joint use facilities, together with documentation from the utilities involved outlining limitations on and arrangements and schedules for development, use, operation, and maintenance of such facilities.

(bb) Identification of services and equipment which could be made available to other utilities such as but not limited to leak detection and repair, and emergency equipment.

(vi) A plan for satellite management or transfer of ownership which shall include:

(aa) Identification of utilities which have both the ability and willingness to assume satellite management of another system or systems, whether within or outside the public water supply management area, and a map identifying areas within which the respective utilities will provide satellite management.

(bb) Identification of public water systems willing to have satellite management provided by another utility, or willing to transfer ownership to another utility.

(cc) Development of a water system satellite management program and schedule for its implementation.

(vii) Provisions for minimum design standards applicable to all water system improvements and all new public water systems within the management area. Any

minimum design standard established by a WUCC shall be at least as stringent as those standards recognized by the department.

(viii) Presentation of financial data as related to areawide issues such as interconnections, shared or joint use facilities, regional projects, and information not included in individual water system plans.

(ix) Consideration of the potential impacts of the plan on other uses of water resources, including water quality, flood management, recreation, hydropower, and aquatic habitat issues.

(D) Executive Summary

An executive summary shall be prepared by the WUCC to serve as an abbreviated overview of the coordinated water system plan for the public water supply management area. It shall be factual and concise, and shall summarize the major elements of the coordinated water system plan. The executive summary shall contain at least the following items:

(i) Maps at a scale of 1:50,000 of existing and potential service areas within exclusive service area boundaries identified in subdivision (d) (2) (B).

(ii) Maps at a scale of 1:50,000 of existing and future sources of public water supply, including watersheds, reservoirs, wells, stream diversions, treatment facilities, and shared or joint-use facilities including interconnections.

(iii) A brief summary of the water supply assessment for the public water supply management area.

(iv) A summary table of current and projected population, water demand by user category, and safe yield of existing and potential sources of supply for each exclusive service area and the public water supply management area as a whole.

(v) A brief summary of plans for interconnections, joint use facilities, and satellite management.

(vi) A summary of the potential impact of the coordinated water system plan on other uses of water resources.

(vii) Pertinent financial information.

(viii) Other factors deemed relevant.

(ix) A copy of the table of contents and lists of figures, tables, and maps contained in the full coordinated water system plan.

(e) Plan Preparation

In preparing the plan the WUCC shall utilize the following unless otherwise approved by the department:

(1) Population projections prepared by the Connecticut office of policy and management.

(2) The maintenance of an adequate margin of safety between supply and demand as approved by the department.

(3) Gallons as a unit of measure.

(4) Maps and graphs and other supporting materials as necessary.

(5) Five years from the time of plan preparation and 20 to 50 years from the last decennial census as the planning periods for projecting future demand and planning facilities to meet future water supply needs. The WUCC shall consult with the department as to the level of detail required in reference to each planning period.

(6) Safe yield information as calculated in accordance with section 25-32d-1 of the Regulations of Connecticut State Agencies.

(7) Watershed boundaries and drainage areas within basins as defined by the Connecticut department of environmental protection.

(f) Plan Submission

(1) The WUCC shall submit the following documents to the department in accordance with the following schedule:

(A) After soliciting and responding to comments from regional planning agencies, municipalities, state agencies, and other interested persons, a final water supply assessment shall be prepared. The final water supply assessment shall be submitted within 6 months of the first meeting.

(B) Preliminary exclusive service area boundaries shall be submitted within 9 months of the first meeting. The WUCC shall make the preliminary exclusive service area boundaries available for public review and comment.

(C) After soliciting and responding to comments from regional planning agencies, municipalities, state agencies, and other interested persons, final exclusive service area boundaries shall be established. The final exclusive service area boundaries shall be submitted within 12 months of the first meeting.

(D) If exclusive service area boundaries have not been established and submitted to the department within the time schedule established in subdivision (B), the WUCC shall provide to the department documentation that the WUCC has consulted with the department of public utility control, a summary discussion of unresolved issues, identification of persons affected by the conflict, and additional information as necessary. At the discretion of the commissioner, a hearing may be held to receive comment on exclusive service area boundaries. The department shall then establish exclusive service area boundaries in disputed areas in accordance with public act 85-535.

(E) The WUCC shall prepare a coordinated water system plan and solicit comments thereon in accordance with public act 85-535. The coordinated plan and copies of comments shall be submitted to the commissioner within 24 months of the first meeting.

(2) A request for an extended schedule shall be submitted in writing by the WUCC to the department. The request shall detail reasons for not meeting the required schedule, and propose a revised schedule. The request shall be submitted at least thirty days prior to the scheduled submission date. The department will review the request and may at its discretion approve a revised schedule for plan submission and consideration.

(3) The department shall inform the WUCC of any additional information which is necessary to comply with these regulations and shall develop a schedule for its submission. Copies of any additional information shall be submitted by the WUCC in the same manner as the plan.

(g) Plan Approval

After the WUCC has completed the coordinated water system plan, it shall submit the plan to the department for approval.

(1) The department shall publish legal notice in the Connecticut newspaper having the largest daily circulation within the management area of the existence and availability of the coordinated plan for public comment.

(2) The department in making a decision to approve or reject a coordinated water system plan shall consider at least the following:

(A) Ability to provide pure, adequate and reliable water supplies for present and projected future customers;

(B) Potential conflict over the use of such supplies;

(C) Adherence to public act 85-535;

(D) Extent to which the plan identifies water supply problems within the public water supply management area and provides solutions to those problems;

- (E) Consistency with local, regional, and state land use plans and growth policies;
- (F) Appropriateness of exclusive service area boundaries in relation to local, regional, and state growth policies, and the extent to which any areas are left as islands or areas isolated outside proposed exclusive service area boundaries;
- (G) Integration of public water systems, consistent with the protection and enhancement of public health and well-being;
- (H) Impact on other uses of water resources;
- (I) Extent to which minimum design standards are sufficient and appropriate;
- (J) Public comment;
- (K) Availability of alternate sources of water supplies;
- (L) Consistency with existing state agency regulatory programs and statutory requirements;
- (M) Compatibility with plans of other public water supply management areas;
- (N) Comments received from the department of environmental protection, department of public utility control, the office of policy and management, municipalities, regional planning agencies, local and regional health departments, or other interested persons; and
- (O) Any other factors deemed relevant.

(3) The department may, at its discretion, schedule a public hearing within the public water supply management area to receive public comment on a coordinated water system plan.

(h) **Plan Distribution**

The WUCC shall solicit comments and distribute copies of the plan and its components as follows:

(1) Water supply assessment and exclusive service area boundaries

(A) Submit three copies each of the preliminary and final water supply assessment and preliminary and final exclusive service area boundaries to the departments of health services and environmental protection and two copies each to the department of public utilities control and office of policy and management.

(B) Submit one copy each of the preliminary and final water supply assessment and preliminary and final exclusive service area boundaries to each regional planning agency and chief administrative official of municipalities within the management area.

(C) Mail written notice of the existence and availability of the preliminary water supply assessment and preliminary exclusive service area boundaries and the opportunity to comment thereon, to each municipal planning commission, local health official, eligible WUCC member and other interested persons within the management area.

(D) Mail written notice of the existence and availability of the final water supply assessment and final exclusive service area boundaries to the individuals listed in subdivision (1) (C).

(E) Provide one copy for public viewing to the department of health services and each regional planning agency with municipalities within the management area.

(2) Coordinated plan

(A) Submit copies of the coordinated water system plan to agencies listed in subdivision (1) (A).

(B) Distribute one copy of the executive summary of the coordinated plan with notice of the existence and availability of the complete coordinated water system plan and the opportunity to comment thereon to each chief administrative official of municipalities within the management area and to each regional planning agency

and chief administrative official with municipalities outside the management area in which a potential source of supply is located.

(C) Mail written notice of the existence and availability of the coordinated plan and the opportunity to comment thereon to the individuals listed in subdivision (1) (C).

(D) Submit three copies of the coordinated plan and copies of all comments received by the WUCC to the department of health services.

(3) Approved coordinated plan

(A) Submit copies of the approved coordinated plan to agencies listed in subdivision (1) (A). In addition three copies shall be submitted to each regional planning agency with a municipality within the management area.

(B) Mail written notice of the existence and availability of the approved coordinated plan to individuals listed in subdivision (1) (C) and to the chief administrative official of each municipality within the management area.

(C) Distribute a copy of the executive summary of the approved coordinated plan to individuals listed in subdivision (2) (B) if the department determines that there have been major modifications since the distribution of the executive summary of the draft plan.

(D) Maintain one copy of the approved coordinated plan for public viewing at the department of health services and each regional planning agency with municipalities within the management area.

(E) Maintain copies of revised sections or amendments to the plans for public viewing as outlined in subdivision (3) (D) and distribute revised sections or amendments in the same manner as the plan.

(i) **Plan Updates**

(1) The coordinated water system plan shall be reviewed and updated by the WUCC at least every ten years or sooner, if the WUCC or the department deems it necessary. If necessary, the commissioner shall reconvene the WUCC for management area for this purpose. The department shall inform the WUCC in writing of the section(s) of the plan requiring revisions and of the reasons such revision is necessary. Such revised plan shall be submitted within a reasonable schedule established by the department, and in accordance with procedures for developing a coordinated water system plan.

(2) The WUCC shall submit a revised plan or an amendment to an existing plan whenever the department determines that a significant component of an existing plan is no longer valid. A revised plan or amendment shall be prepared by the WUCC whenever exclusive service area boundaries are revised. A revised plan or an amendment shall be distributed in the same manner as the coordinated water system plan.

(3) If the boundaries of the public water supply management area are altered by the department pursuant to subsection (j) the WUCC shall update the coordinated water system plan accordingly.

(j) **Alteration of Public Water Supply Management Area Boundaries and Priorities**

(1) Once the final water supply assessment for a public water supply management area has been submitted to the department by the WUCC, the management area boundaries may not be altered until the coordinated water system plan is completed.

(2) Alteration of public water supply management area boundaries or priorities may be initiated by the department in accordance with the procedures and criteria for establishing boundaries and priorities.

(3) The coordinated water system plan shall be revised as necessary, due to alteration of public water supply management area boundaries, within six months of the date of such action, unless an extended schedule is approved by the department.

(k) **Plan Implemented**

(1) To the extent feasible, any permit issued by the department pursuant to chapter 474 of the Connecticut General Statutes shall be consistent with any approved coordinated water system plan.

(2) Water utilities are responsible for providing adequate service as requested by consumers and under terms otherwise provided by statute, regulation and ordinance within their exclusive service area boundaries within a reasonable time frame. This may include but not be limited to development of supply sources, main extensions, or satellite management.

(3) No public water supply system may be approved within a public water supply management area after the commissioner has convened a WUCC unless an existing public water supply system is unable to provide water service or the WUCC recommends such approval.

(4) All individual public water supply plans submitted pursuant to section 25-32d of the Connecticut General Statutes shall be consistent with all applicable approved coordinated water system plans.

(5) Unless otherwise approved by the department, all new public water systems and system improvements within a management area for which a coordinated water system plan has been approved shall conform to or exceed minimum design provisions developed by the WUCC.

(Effective June 24, 1986)

TABLE OF CONTENTS

**Establishment of Criteria and Performance Standards for
Classification of Water Company Lands, and
Department of Health Services Review of
Disposition and Use of Such Lands**

Definitions 25-37c- 1

Establishment of criteria for classification of water company owned
land. 25-37c- 2

**Establishment of Criteria and Performance Standards for
Classification Water Company Lands, and
Department of Health Services Review of
Disposition and Use of Such Lands**

Sec. 25-37c-1. Definitions

(a) “Applicant” means a water company that proposes to sell, lease, assign or otherwise dispose of or change the use of any water company owned land, or any state department, institution or agency that proposes to sell, lease, assign or otherwise dispose of or change the use of any water company owned land acquired through condemnation.

(b) “Aquifer” means a subsurface water stratum of earth, sand, gravel, porous stone or other material.

(c) “Class 1 land” means all land owned by a water company which is either:

(1) Within two hundred and fifty feet of high water of a reservoir or one hundred feet of all water courses as defined in this section;

(2) within the areas along water courses which are covered by any of the critical components of a stream belt;

(3) land with slopes fifteen percent or greater without significant interception by wetlands, swales and natural depressions between the slopes and the water courses;

(4) within two hundred feet of ground water wells;

(5) an identified direct recharge area or outcrop of aquifer now in use or available for future use, or

(6) an area with shallow depth to bedrock, twenty inches or less, or poorly drained or very poorly drained soils as defined by the United States Soil Conservation Service that is contiguous to land described in subdivisions (3) or (4) of this subsection and that extends to the top of the slope above the receiving water course.

(d) “Class II land” means all land owned by a water company which is either

(1) on a public drinking supply watershed which is not included in Class 1 or

(2) completely off a public drinking supply watershed and which is within one hundred and fifty feet of a distribution reservoir or a first-order stream tributary to a distribution reservoir.

(e) “Class III land” means all land owned by a water company which is unimproved land off public drinking supply watersheds and beyond one hundred and fifty feet from a distribution reservoir or first order stream tributary to a distribution reservoir.

(f) “Commissioner” means the Commissioner of Health Services.

(g) “Contested case” means a proceeding in which the legal rights, duties or privileges of a party are required to be determined by the Commissioner after an opportunity for hearing or in which a hearing is in fact held.

(h) “Critical components of a stream belt” means

(1) the watercourse of a defined stream including banks, beds and water;

(2) land subject to stream overflow;

(3) associated wetlands, and

(4) shorelines of lakes and ponds associated with the stream.

(i) “First-Order Stream” means a stream which directly enters a reservoir.

(j) “Groundwater” means water residing in or flowing through an aquifer.

(k) “Department of Health Services” means the Connecticut Department of Health Services, or any duly authorized representative thereof, including the Commissioner of Health Services.

(l) "Intervenor" means each person admitted as a participant in a hearing in accordance with Section 25-37d-2 who is not a party.

(m) "Party" means the applicant and each person or agency named or admitted as a party in accordance with Section 25-37d-2 who properly seeks and is entitled as of right to be admitted as a party.

(n) "Person" means any individual, partnership, corporation, association, governmental subdivision, or public or private organization of any character other than an agency.

(o) "Purity and adequacy of public drinking water supply" means the quality and quantity of public drinking water as determined by the Commissioner under subsection (d) of Section 25-32 of the General Statutes.

(p) "Source of water or ice supply" includes all springs, streams, watercourses, brooks, rivers, lakes, ponds, wells, or underground waters from which water or ice is taken, and all springs, streams, watercourses, brooks, rivers, lakes, ponds, wells or underground waters tributary thereto and all lands drained thereby.

(q) "Tract of land," or "Parcel" means a discrete separate unit of land held by one owner or owners in common.

(r) "Water company" means any water company as defined in Section 25-32a of the General Statutes.

(s) "Watercourse" means any river, stream, brook, canal, reservoir, lake, pond, marsh, swamp, bog or other surface body of water.

(t) "Watershed land" means land from which water drains into a public drinking water supply, including land lying underneath watercourses that are tributary to a public drinking water supply.

(u) "Water supply maintenance and improvement" includes normal forest and timber harvesting and planting practices followed by water utilities.

(v) "Well" means a structure designed to withdraw groundwater for a public drinking water supply.

(w) "Direct recharge area" means the land surface immediately overlying the aquifer tapped by a well.

(x) "Aquifer outcrop" means an area of ground surface that is intersected by an aquifer.

(y) "Reservoir" means an impoundment of untreated surface water.

(z) "Distribution reservoir" means a reservoir from which water is directly conveyed to treatment facilities which are connected to the water distribution system.

(Effective February 6, 1980)

Sec. 25-37c-2. Establishment of criteria for classification of water company owned land

The criteria for determining the proper identification and classification of the three classes of water company owned lands set forth in Section 25-37e of the General Statutes are as follows:

(a) Class I land includes all land owned by a water company which is either:

(1) within two hundred and fifty feet of high water of a reservoir or one hundred feet of all watercourses as defined in agency regulations adopted pursuant to Sec. 25-37c-1 of the General Statutes;

(2) within the areas along watercourses which are covered by any of the critical components of a stream belt;

(3) land with slopes fifteen percent (15%) or greater without significant interception by wetlands, swales and natural depressions between the slopes and the watercourses;

(4) within two hundred feet of groundwater wells;
 (5) an identified direct recharge area or outcrop of aquifer now in use or available for future use; or

(6) an area with shallow depth to bedrock, twenty inches or less, or poorly drained or very poorly drained soils as defined by the United States Soil Conservation Service that is contiguous to land described in subdivisions (3) or (4) of this subsection and that extends to the top of the slope above the receiving watercourse.

(b) Class II land includes all land owned by a water company which is either

(1) on a public drinking supply watershed which is not included in Class I or

(2) completely off a public drinking supply watershed and which is within one hundred and fifty feet of a distribution reservoir or a first-order stream tributary to a distribution reservoir.

The Class II land defined above is characterized by the following criteria:

(1) Category 1. Inland which is either:

i. Not classified in Class I with slopes fifteen percent (15%) or greater *with* significant interception by wetlands, swales and natural depressions between the slopes and the watercourses; or

ii. land from which surface runoff directly enters an identified aquifer recharge or outcrop area supplying used or future wells; or

iii. an area with shallow to bedrock, twenty (20) inches or less, poorly drained, and very poorly drained soils.

iv. on watersheds for future reservoirs which would fall into category 1 if the watershed were used for drinking water supply.

(2) Category 2. Land which is either:

i. Not classified in Category 1 with slopes less than fifteen percent (15%) *without* significant interception by wetlands, swales, and natural depressions, between the slopes and the watercourses; or

ii. on watersheds for future reservoirs which would fall into Category 2 if the watershed were used for drinking water supply.

(3) Category 3. Land which is either:

i. Not listed in Categories 1 or 2 with slopes less than fifteen percent (15%) *with* significant interception by wetlands, swales, and natural depressions between the slopes and the watercourses; or

ii. on watersheds for future reservoir(s) which would fall into Category 3 if the watershed were used for drinking water supply.

(4) Category 4. Land which is:

i. Completely off public drinking supply watersheds and which is within 150' of a distribution reservoir or a first-order stream tributary to a distribution reservoir.

(c) Class III land includes all land owned by a water company which is:

(1) Unimproved land off public drinking water supply watersheds and beyond 150' from a distribution reservoir or first-order stream tributary to a distribution reservoir.

(Effective February 6, 1980)

TABLE OF CONTENTS

Water Company Land Permits

Application for a permit	25-37d- 1
Standards of review of application	25-37d- 2
Summary ruling on proposed actions without significant adverse impact	25-37d- 3
Plenary rulings—public hearing	25-37d- 4
Designation of a party or intervener.	25-37d- 5
Evidence at the public hearing.	25-37d- 6
Decision	25-37d- 7
Signature of applicant	25-37d- 8
Severance.	25-37d- 9

Water Company Land Permits

Sec. 25-37d-1. Application for a permit

(a) No water company shall sell, lease, assign or otherwise dispose of or change the use of any watershed lands, and any off-watershed Class II lands, except as provided in sections 25-37c-1 and 2, and 25-37d-1 through 10, inclusive, of the Regulations of Connecticut State Agencies without a written permit from the Commissioner of Public Health.

(b) An application for a permit shall be made by the water company on forms furnished by the Commissioner. These forms shall be sufficiently complete and shall contain such information as the Commissioner deems necessary for a fair determination of the Commissioner's statutory responsibilities. Such application form shall include but not be limited to: a description of the property, with such site plan and maps as are appropriate; a description of the proposed use of the property upon transfer or change in use; data on the chemical, physical and biological characteristics, where appropriate, of the reservoir, watershed and impact of the proposed use; and documentation of the proposed restrictions to be applicable to property covered by the application.

(c) Upon submission of an application, the Commissioner shall review it to determine whether there is sufficient information therein to determine whether the proposed action will or will not have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply. In connection therewith, the Commissioner may require that the applicant provide such additional information as the Commissioner deems necessary on any proposed use restriction, to aid in determining the enforceability thereof against subsequent owners, lessees and assignees.

(d) An application will not be deemed to be complete by the Commissioner until all information, papers and documents required as part of and in support of the application have been submitted in proper form, and the Commissioner may require that the application be supplied in sufficient copies. For the purpose of statutory limitations, the Commissioner shall acknowledge receipt of the completed application. The Commissioner shall notify the applicant and shall notify the chief executive officer of the town or municipality in which the proposed action is to take place of the pendency of the application thereof and may notify such other towns, municipalities, state agencies or persons as deemed appropriate.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-2. Standards of review of application

(a) Once a complete application has been received, the Commissioner shall review the proposed action in accordance with the performance criteria set forth herein in order to determine whether the proposed action may have a significant adverse impact upon the present and future purity and adequacy of the public drinking supply.

(b) The Commissioner shall not grant a permit for the sale, lease or assignment of Class I land.

(c) The Commissioner shall not grant a permit for a change in use of Class I land unless the applicant demonstrates that such change will not have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply.

(1) The performance criteria which shall be applied in determining whether the proposed change in use of Class I land may have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply are

as follows. The Commissioner shall give due consideration to whether or not the proposed change in use will:

(A) Create an intentional or unintentional point or non-point source of contamination;

(B) disturb ground vegetation on surface public drinking supply watersheds except as required for water supply maintenance and improvement;

(C) create subsurface sewage disposal systems;

(D) create wheeled, tracked or hooped transport of any kind on surface public drinking supply watersheds except as required to manage the watershed or that which is under water utility control, and except as specifically allowed under section 25-43c (a) of the Connecticut General Statutes.

(d) The Commissioner shall not grant a permit for the sale, lease, assignment or change in use of any land in Class II unless the applicant demonstrates that the proposed sale, lease, assignment or change in use will not have a significant adverse impact upon the purity and adequacy of the public drinking supply, and that any use restrictions which the Commissioner requires as a condition of granting a permit can be enforced against subsequent owners, lessees and assignees.

(1) The performance criteria which shall be applied in determining whether the proposed action within the various categories of Class II lands may have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply are as follows. The Commissioner shall give due consideration to whether or not the proposed change in use will:

(A) Category 1.

(i) Create an intentional or unintentional point or non-point source of contamination. Adequate man-made interception and control safeguards as approved by the Department of Public Health may be considered;

(ii) prevent maintenance of ground vegetation for more than one growing season on surface public drinking water supply watersheds except as required for water supply maintenance and improvement or as associated with access to or underlying a habitable structure whose use meets the requirements of (i) above;

(iii) significantly decrease the adequacy of water supply through: loss of aquifer recharge area for infiltration due to impervious land cover; reduction of hydraulic connection between stream and aquifer due to siltation; decrease in stream flow available for induction due to increased surface water run-off rates;

(iv) allow subsurface sewage disposal systems in areas with shallow to bedrock soils, twenty (20) inches or less, poorly drained, and very poorly drained soils. Where subsurface sewage disposal systems are proposed, the design and installation of such systems will be in accord with Department of Public Health regulations and shall use seepage rates that do not exceed that of the existing soils on the site. Seepage rates in fill sections will not be used in the system design.

(B) Category 2.

(i) Create an intentional or unintentional point or non-point source of contamination. Adequate man-made interception and control safeguards approved by the Department of Public Health may be considered;

(ii) permanently disturb ground vegetation in areas with present slopes greater than five percent (5%) except that required for water supply maintenance and improvement, or that associated with access to or underlying a habitable structure whose use meets the requirements of (i) above.

(C) Category 3.

(i) Create an intentional or unintentional point or non-point source of contamination. Adequate man-made interception and control safeguards approved by the Department of Public Health may be considered.

(D) Category 4.

(i) Create interstate, state, or town roadways or mainline railroads except to provide access for allowable uses;

(ii) encourage uncontrolled access by the general public.

(e) In determining the conditions and restrictions in use necessary to maintain the adequacy and purity of the public drinking water supply due consideration must be given to:

(1) the creation of point or non-point sources of contamination;

(2) the disturbance of ground vegetation;

(3) the creation of subsurface sewage disposal systems;

(4) the degree of water treatment provided;

(5) any other significant potential source of contamination of the public drinking water supply;

(6) the decrease in both surface and groundwater supplies resulting from or caused by the increased run-off due to proposed changes in land use;

(7) the legal adequacy of the deed control mechanisms enforceable against subsequent owners, lessees and assignees, together with any other land use control mechanisms available and suitable for such purposes;

(8) the available dilution and the natural purification process of the receiving stream and the residence time and natural purification processes in the receiving reservoir; and

(9) the distance between the proposed change and the beneficial effect of all intervening wetlands.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-3. Summary ruling on proposed actions without significant adverse impact

(a) If the Commissioner upon review of the completed application finds that the applicant has demonstrated that the proposed action will not have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply, and if the applicant has further demonstrated that the conditions or restrictions in use required by the Commissioner as necessary to maintain the purity and adequacy of the public drinking water supply are fully enforceable against subsequent owners, lessees, and assignees, then the Commissioner may grant a permit at this stage without a public hearing. Nothing herein however shall prevent the Commissioner from scheduling a public hearing on said application in accordance with the procedures set forth in section 25-37d-4 of the Regulations of Connecticut State Agencies.

(b) If the Commissioner makes the findings described in the above subsection and determines not to hold a public hearing on said application, then within sixty (60) days after receipt of the completed application, the Commissioner shall issue a written decision setting forth the reasons for granting the permit with or without conditions.

(c) Within the prescribed time limit of section 25-37d-4 of the Regulations of Connecticut State Agencies the Commissioner shall notify the applicant and all parties to the proceeding and the chief executive officer of the town or municipality in which the proposed action is to take place of the pendency of the application and may notify such other town, municipalities, state agencies or persons as the

Commissioner determines appropriate by forwarding them a copy of the written decision by certified mail. The Commissioner may also cause notice of the order issuing a permit to be published in a daily newspaper having a general circulation in the community where the proposed action is to take place.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-4. Plenary rulings—public hearing

(a) If, upon receipt of a complete permit application, the Commissioner finds that the proposed action does or may have a significant adverse impact upon the present and future purity and adequacy of the public drinking water supply, and if the Commissioner finds that any proposed conditions or restrictions in use are not or may not be sufficient to maintain the purity and adequacy of the public drinking water supply or be sufficiently enforceable against subsequent owners, lessees and assignees, then the Commissioner shall appoint a professional review team as provided by section 25-37d of the Connecticut General Statutes, and docket the application for a public hearing.

(b) The location of the public hearing shall be at the discretion of the Commissioner.

(c) Notice of the hearing shall be published at least once not more than forty-five (45) days and not fewer than fifteen (15) days before the date set for the hearing in a newspaper having a general circulation in the community where the proposed action is to take place. In addition to notification of the general public through newspaper publication, the Commissioner shall give notice to the applicants, all parties and intervenors, and may notify the chief executive officer of the town or municipality in which the proposed action is to take place of the pendency of the application and such other town, municipalities, state agencies or persons as the Commissioner deems appropriate.

(d) The notice of the public hearing shall include:

- (1) a statement of the time, place and nature of the hearing;
- (2) a statement of the legal authority and jurisdiction under which the hearing is to be held;
- (3) a reference to the particular sections of the statutes and regulations involved;
- (4) a short and plain statement of the matters asserted. If the Commissioner or other party is unable to state the matters in detail at the time the notice is served, the initial notice may be limited to a general statement of the issues involved. Thereafter upon application a more definite and detailed statement shall be made available at the Commissioner's office.

(e) The Commissioner may authorize a hearing officer to conduct an inquiry and to preside at the public hearing. The Commissioner may by order of the hearing officer require any party or other participant that proposes to offer substantive, technical or expert testimony to prefile such testimony in written form on such date before or during the hearing as the presiding officer shall direct. Such prefiled written testimony shall be received in evidence with the same force and effect as though it were stated orally by the witnesses who have given the evidence, provided that each witness shall be present at the hearing at which the prefiled testimony is offered, shall adopt the written testimony under oath, and shall be made available for cross examination as directed by the hearing officer. Prior to its admission such written testimony shall be subject to objections by parties. The hearing officer may subpoena witnesses and require the production of records, papers and documents to the record of the public hearing.

(f) Opportunity shall be afforded all parties to respond and present evidence and argument on all issues involved.

(g) Unless precluded by law, informal disposition may be made of any contested case by stipulation, agreed settlement, consent order, or default.

(h) The record of the public hearing shall include:

- (1) all pleadings, motions and intermediate rulings;
- (2) evidence received or considered;
- (3) questions and offers of proof, objections and rulings thereon;
- (4) any decision, opinion, or report by the officer presiding at the hearing.

(i) Oral proceedings or any part thereof shall be transcribed on request of any party or intervenor. The requesting party or intervenor shall pay accordingly the cost of such transcript or part thereof.

(j) Findings of fact shall be based exclusively on the evidence and on matters officially noticed.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-5. Designation of a party or intervenor

(a) **Filing of petition.** Any person other than the applicant who seeks to be admitted as a party or an intervenor to any application proceeding shall file a written petition to be so designated not later than fifteen (15) days before the date of the hearing on the application.

(b) **Contents of petition.** The petitioner shall state:

- (1) the name and address of the petitioner;
- (2) and describe the manner in which the petitioner claims to be substantially and specifically affected by the proceeding;
- (3) the contention of the petitioner concerning the application;
- (4) whether the petitioner seeks admission as a party or intervenor;
- (5) in what way and to what extent the petitioner proposes to participate in the hearing;
- (6) the nature of the evidence, if any, that the petitioner intends to present in the event that the petition is granted.

(c) The Commissioner or designated hearing officer may grant, deny, or grant with such conditions as the Commissioner or hearing officer deems appropriate the petition, taking into account whether or not the participation of the petitioner will furnish assistance to the Commissioner in resolving the disposition of the application for the permit or the participation of such person is necessary to the proper disposition of the application.

(d) No grant of leave to participate as a party or intervenor shall be deemed to be an expression by the Commissioner that the person permitted to participate may be aggrieved if the permit is granted or denied.

(e) The Commissioner or designated hearing officer may, during the hearing on the application, designate additional parties or intervenors upon motion and a showing of good cause for failing to submit a timely petition in accordance with this section when it is determined the participation of such person is necessary to the proper disposition of the application or the person will furnish substantial assistance in resolving the disposition of the application.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-6. Evidence at the public hearing

(a) Any oral or documentary evidence may be received, but the Commissioner shall, as a matter of policy, provide for the exclusion of irrelevant, immaterial, or

unduly repetitious evidence. The Commissioner or hearing officer shall give effect to the rules of privilege recognized by law. Subject to these requirements, when a hearing will be expedited and the interests of the parties will not be prejudiced substantially, any part of the evidence may be received in written form.

(b) Documentary evidence may be received in the form of copies or excerpts, if the original is not readily available. Upon request, parties shall be given an opportunity to compare the copy with the original.

(c) A party or intervenor may conduct cross examinations required for a full and true disclosure of the facts.

(d) **Facts noticed, commission records.** The Commissioner may take notice of judicially cognizable facts, including prior decisions and orders of the Commissioner. Any exhibit admitted as evidence by the Commissioner in a prior hearing may be offered as evidence in a subsequent hearing and admitted as an exhibit therein; but the Commissioner shall not deem such exhibit to be judicially cognizable in whole or in part and shall not consider any facts set forth therein unless such exhibit is duly admitted as evidence in the proceeding then being heard.

(e) **Facts noticed, procedure.** The Commissioner may take notice of generally recognized technical or scientific facts within the Commissioner's specialized knowledge. Parties shall be afforded an opportunity to contest the material so noticed by being notified before or during the hearing, or by an appropriate reference in preliminary reports or otherwise of the material noticed. The Commissioner shall nevertheless also employ the Commissioner's experience, technical competence, and specialized knowledge in evaluating the evidence presented at the hearing for the purpose of making the findings of the facts and arriving at a decision.

(f) The evaluation of the professional review team made in accordance with the requirements of Section 25-37d of the Connecticut General Statutes shall become part of the hearing record after its adoption under oath, and the authors thereof shall be subject to cross-examination on its contents.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-7. Decision

(a) The hearing officer shall submit to the Commissioner and to the applicant and the chief executive officer of the town or municipality in which the proposed action is to take place no later than thirty (30) days following the completion of the hearing, written findings and recommendations on whether to grant or deny the application, and setting forth the hearing officer's reasons therefore.

(b) In making a final decision on the application, the Commissioner shall consider the record and evidence submitted in the proceedings in accordance with the standards of review set forth in Section 25-37d-2 of the Regulations of Connecticut State Agencies.

(c) The Commissioner's decision shall be in writing and shall set forth the reasons for the conclusions.

(d) The Commissioner shall issue a decision within one hundred and twenty (120) days of receipt of the completed application, and shall forward a copy of the decision to the applicant, and all other parties to the proceeding and may notify the chief executive officer of the town or municipality in which the proposed action is to take place of the pendency of the application and such other towns, municipalities, state agencies or persons as the Commissioner deems appropriate. Notice of the Commissioner's decision may be published in a newspaper having a general circulation in the community where the proposed action is to occur.

(Effective February 6, 1980; amended September 6, 2006)

Sec. 25-37d-8. Signature of applicant

No permit issued under these regulations shall be effective until the applicant or his duly authorized representative shall have signed the permit, which signature shall constitute an agreement to abide by any terms and conditions therein.

(Effective February 6, 1980)

Sec. 25-37d-9. Severance

The invalidity of any word, clause, sentence, section, part or provision of these regulations shall not affect the validity of any other part.

(Effective February 6, 1980; amended September 6, 2006)

TABLE OF CONTENTS

Water Pollution Control

Repealed 25-54i-1.0—25-54i-5.2

Water Pollution Control

(See § 22a-430)

Secs. 25-54i-1.0—25-54i-5.2.

Repealed, December 18, 1984.

TABLE OF CONTENTS

**Terminals for the Loading or Discharge of Petroleum or
Chemical Liquids or Products From Vessels**

Definitions	25-54cc-1
Terminal operator.	25-54cc-2
Design of terminal. Drawing of facilities filed	25-54cc-3
Operating rules of terminal.	25-54cc-4
Plan of action to contain and remove spills	25-54cc-5
Equipment	25-54cc-6
Statement on handling of miscellaneous waste oils	25-54cc-7

Terminals for the Loading or Discharge of Petroleum or Chemical Liquids or Products From Vessels

(Effective October 27, 1970.)

Sec. 25-54cc-1. Definitions

As used in these regulations:

- (a) "oil" means floating oil of any kind or in any form including but not limited to fuel oil, sludge, oil refuse and oil mixed with other matter;
- (b) "terminal" means any facility or area used for the loading or discharge of petroleum or chemical liquid or products to or from vessels which is under direction of a single terminal operator;
- (c) "terminal operator" means the specific person charged with the responsibility of operating a terminal;
- (d) "commission" means the water resources commission of the state of Connecticut;
- (e) "spill" means any discharge, spillage, seepage, leakage, infiltration, or any other method by which oil or chemical products could enter the waters of the state;
- (f) "vessel" means any waterborne, motor-driven craft or barge used for commercial transportation;
- (g) "plan" means a program of action shown by a diagram or text which is to be made operative in case of a spill.

Sec. 25-54cc-2. Terminal operator

Each licensed terminal shall designate a "terminal operator" and file with the commission a current listing of his name and address and the names and addresses of his alternates, together with their business and home telephone numbers.

Sec. 25-54cc-3. Design of terminal. Drawing of facilities filed

Each licensed terminal shall be so designed, planned, constructed, and maintained so as to protect the public safety and prevent discharge or spillage into the waters of the state. Each licensed terminal shall file with the commission immediately after July first of each year a drawing or current revision of a drawing of its existing facilities. Such drawing of existing facilities filed with the commission shall be to scale and the sheet or sheets necessary shall not exceed twenty-four by thirty-six inches and shall show the size and location and identify all structures including, if applicable, but not limited to the following: tanks, diking, slop tank, loading racks, fences, roadways, storm drainage systems, truck washing stands, oil separators, disposal systems, points of transfer, transfer piping, storage areas for flexible hose or pollution correction equipment.

Sec. 25-54cc-4. Operating rules of terminal

Each licensed terminal shall file with the commission a copy of its current operating rules including the procedures for cargo transfers to or from vessels.

Sec. 25-54cc-5. Plan of action to contain and remove spills

Each licensed terminal shall file with the commission a plan of action to contain and remove any oils from spills. Such plan shall include a list of the available equipment which indicates its type and capacity, the procedure for maintaining such equipment in workable condition, its location, and the procedure for making it available for use as indicated by the plan, together with the name and address of

any contractor who may have been retained for such services and any arrangements or descriptions of such with others concerning responsibilities for these matters.

Sec. 25-54cc-6. Equipment

Each licensed terminal shall maintain or have available at the location, indicated by the plan, suitable equipment to promptly contain and remove any leakage or spillage from the waters of the state. Such equipment shall be in position to be promptly and effectively used as indicated by the plan.

Sec. 25-54cc-7. Statement on handling of miscellaneous waste oils

Each licensed terminal shall file with the commission a statement on the method of handling and disposal of all miscellaneous waste oils such as drippings, cleanings from oil separators, recoveries from spills. If such miscellaneous waste oils are removed from the terminal, the statement shall include the method and responsibility for its disposal.

TABLE OF CONTENTS

Hazardous Waste Management

Transferred 25-54cc (c)-1—25-54cc (c)-16
Repealed 25-54cc (c)-17—25-54cc (c)-18
Transferred 25-54cc (c)-19
Repealed 25-54cc (c)-20—25-54cc (c)-22
Transferred 25-54cc (c)-23—25-54cc (c)-41
Repealed 25-54cc (c)-42
Transferred 25-54cc (c)-43
Repealed 25-54cc (c)-44
Transferred 25-54cc (c)-45—25-54cc (c)-48

Hazardous Waste Management

Correlated Table

<i>Former Section Number</i>	<i>New Section Number</i>
25-54cc (c)-1	22a-449 (c)-1
25-54cc (c)-2	22a-449 (c)-2
25-54cc (c)-3	22a-449 (c)-3
25-54cc (c)-4	22a-449 (c)-4
25-54cc (c)-5	22a-449 (c)-5
25-54cc (c)-6	22a-449 (c)-6
25-54cc (c)-7	22a-449 (c)-7
25-54cc (c)-8	22a-449 (c)-8
25-54cc (c)-9	22a-449 (c)-9
25-54cc (c)-10	22a-449 (c)-10
25-54cc (c)-11	22a-449 (c)-11
25-54cc (c)-12	22a-449 (c)-12
25-54cc (c)-13	22a-449 (c)-13
25-54cc (c)-14	22a-449 (c)-14
25-54cc (c)-15	22a-449 (c)-15
25-54cc (c)-16	22a-449 (c)-16
25-54cc (c)-19	22a-449 (c)-17
25-54cc (c)-23	22a-449 (c)-18
25-54cc (c)-24	22a-449 (c)-19
25-54cc (c)-25	22a-449 (c)-20
25-54cc (c)-26	22a-449 (c)-21
25-54cc (c)-27	22a-449 (c)-22
25-54cc (c)-28	22a-449 (c)-23
25-54cc (c)-29	22a-449 (c)-24
25-54cc (c)-30	22a-449 (c)-25
25-54cc (c)-31	22a-449 (c)-26
25-54cc (c)-32	22a-449 (c)-27
25-54cc (c)-33	22a-449 (c)-28
25-54cc (c)-34	22a-449 (c)-29
25-54cc (c)-35	22a-449 (c)-30
25-54cc (c)-36	22a-449 (c)-31
25-54cc (c)-37	22a-449 (c)-32
25-54cc (c)-38	22a-449 (c)-33
25-54cc (c)-39	22a-449 (c)-34
25-54cc (c)-40	22a-449 (c)-35
25-54cc (c)-41	22a-449 (c)-36
25-54cc (c)-43	22a-449 (c)-37
25-54cc (c)-45	22a-449 (c)-38
25-54cc (c)-46	22a-449 (c)-39
25-54cc (c)-47	22a-449 (c)-40
25-54cc (c)-48	22a-449 (c)-41

(Effective February 14, 1986)

Secs. 25-54cc (c)-17—25-54cc (c)-18.

Repealed, February 14, 1986.

Secs. 25-54cc (c)-20—25-54cc (c)-22.

Repealed, February 14, 1986.

Sec. 25-54cc (c)-42.

Repealed, February 14, 1986.

Sec. 25-54cc (c)-44.

Repealed, February 14, 1986.

TABLE OF CONTENTS

Flood Management Regulations for State Agencies

Connecticut floodplain management regulations for state agencies . . . 25-68h- 1

Floodplain management standards 25-68h- 2

Stormwater management standards 25-68h- 3

Flood Management Regulations for State Agencies

Sec. 25-68h-1. Connecticut floodplain management regulations for state agencies

(a) Definitions.

(1) As used in Sections 25-68h-1, 25-68h-2 and 25-68h-3:

“Hurricane wave wash” means the effect of wave action in a coastal flood hazard zone.

“Significant impact” means any activity that would create:

(A) A five percent increase in peak flow rates at any downstream point;
(B) A twenty percent increase in flow velocities or a change that allows a stable condition to become unstable;

(C) An activity that contributes to an unacceptable cumulative impact;
(D) Any activity that causes flooding on developed property not currently subject to flooding;

(E) An activity that could cause a downstream dam to become unsafe.

“Velocity waters” means the effect of moving water in a coastal flood hazard zone.

(2) As used in Sections 25-68h-1, 25-68h-2 and 25-68h-3, the definitions of the following terms shall be the same as the definitions in Section 25-68b of the General Statutes: activity; base flood; base flood for a critical activity; Commissioner; critical activity; floodplain; flood-proofing; freeboard.

(b) Program Certification.

Not later than one year from the effective date of these regulations any state agencies responsible for a program regulating flood flows within a floodplain shall certify in writing to the Commissioner that all such program(s) within its jurisdiction are being implemented consistent with the criteria in Section 25-68h-1, 25-68h-2 and 25-68h-3 of these regulations. The agency shall specifically describe:

(1) The procedures that will insure that prior to granting a permit or approval for any state activity subject to the regulatory jurisdiction of this program are in compliance with Section 25-68d of the General Statutes and these regulations.

(2) The procedures that will insure that the review and approval of applications for activities subject to the regulatory jurisdiction of this program are generally consistent with Section 25-68d of the General Statutes and these regulations.

(c) Certification of State Agency Activities.

(1) Any state agency proposing or undertaking any activity within or affecting a floodplain shall, as early as possible, but in no event later than 90 days prior to the date of initiating the activity, certify to the Commissioner that the activity is consistent with all applicable standards and criteria in Section 25-68d of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive, of these regulations. Certification shall be made on a form prescribed by the Commissioner and the level of detail of the certification shall be commensurate with the size, complexity and probable impact of the activity. Certification shall include, but not be limited to, a description of the proposed activity, an affirmation that the activity is consistent with all applicable standards and criteria, and, where applicable, certifications from a registered architect or engineer. Any agency providing grants or loans for an activity shall also demonstrate its ability to guarantee that all requirements of Section 25-68d of the General Statutes and Section 25-68h-1 through 25-68h-3, inclusive, of these regulations will be complied with by the person or persons receiving the grant or loan. Unless requested by the Commissioner, the background materials

supporting the certification, including but not limited to plans, analyses and engineering calculations, need not be submitted along with the certification. Such background materials shall be retained by the agency proposing or undertaking any activity and shall be available for inspection by the Commissioner for a period of five years following completion of construction. The certification shall be signed by the head of the agency or his or her designated agent.

(2) Where two or more state agencies cooperate in proposing or undertaking an activity one agency may be designated to prepare the certification and to serve as a point of contact, however, the head of each agency shall sign the certification and each agency shall share the responsibility for the scope and content of the documents prepared pursuant to these regulations.

(d) Rendering a Decision.

The Commissioner shall make a decision either approving or rejecting a certification within ninety days of its receipt and shall notify the agency or agencies in writing of the decision. In the event that a certification is rejected, the Commissioner shall provide the reasons for the rejection and where possible suggestions for modifications or additional information which would make the certification acceptable. If a certification is rejected the agency or agencies having submitted it may request a hearing pursuant to Section 4-177 of the General Statutes.

(e) Revocation.

If the Commissioner determines after approving a certification for an activity, critical activity or program that the agency or agencies which submitted the certification failed to comply with the provisions of Section 25-68d of the General Statutes or these regulations, then the Commissioner may revoke approval of the certification. Such revocation shall be in writing and provide the reasons for the revocation and where possible suggestions for modifications or additional information which would make the certification acceptable.

(f) Exemption.

Any state agency or agencies proposing or undertaking an activity within or affecting the floodplain may apply to the Commissioner for exemption from the provisions of subsection (b) of Section 25-68d of the General Statutes and Sections 25-68h-1 through 25-68h-3, inclusive of these regulations in accordance with subsection (d) of Section 25-68d of the General Statutes.

(Effective April 30, 1987)

Sec. 25-68h-2. Floodplain management standards

(a) All state activities shall conform to the Federal Emergency Management Agency National Flood Insurance Program requirements, specifically Part 60 - Criteria For Land Management and Use, Subpart A Sections 60.3, 60.4 and 60.5.

(b) The following restrictions shall pertain to all new and substantially improved structures located within the floodplain.

(1) Structures shall not be designed for human habitation unless elevated with the lowest floor one foot above the level of the base flood.

(2) Structures and all stored materials which may result in damage to other structures, restriction of bridge openings or other narrow sections of the stream or river shall be anchored or restrained to prevent them from floating away.

(3) Service facilities such as electrical and heating equipment shall be constructed at or above the elevation of the base flood or floodproofed with a passive system.

(4) Structures located within a "coastal high hazard area" as defined in 44 CFR Part 59 shall be elevated on adequately anchored pilings or columns and securely

anchored to such piles or columns such that the lowest portion of the structural members of the lowest floor (excluding the pilings or columns) is elevated to one foot above the base flood and certified by a registered professional engineer or architect that the structure is securely anchored to piling or columns in order to withstand velocity waters and hurricane wave wash.

(5) No new structures shall be permitted on undeveloped coastal barrier beaches as designated by the Federal Emergency Management Agency (FEMA).

(6) All water supply equipment shall be designed to prevent flood waters from entering and contaminating the system.

(7) All sanitary sewer collection systems located in the floodplain must have watertight manhole covers and if equipped with vents, shall extend above the elevation of the base flood.

(c) The following restrictions shall pertain to all filling, dumping, construction, excavating, and other activities which change the topography within the floodplain.

(1) No filling, dumping or construction or other activity shall be allowed which would increase the elevation of the base flood by more than one foot or adversely affect the hydraulic characteristics of the floodplain unless the proposed filling is fully compensated for by excavation in or contiguous to the filled area.

(2) No filling, dumping, construction or excavation will be allowed if these changes will result in a concentration of the natural flow of water such as to cause or increase drainage, erosion or sediment problems.

(3) Any fill placed in the floodplain shall not be greater than that which is necessary to achieve the intended purpose as demonstrated by a plan showing the uses to which the filled land will be put and the final dimensions of the proposed fill or other materials.

(4) Such fill or other material shall be protected against erosion as discussed in the Connecticut Guidelines for Soil Erosion and Sediment Control (1985), as may be amended.

(5) Any activity within a floodway designated by FEMA which would result in an increase of the elevation of the base flood or ten year flood profile is prohibited.

(6) The placement of fill in areas of high velocity flow or at the outside edge of a migrating river bend is discouraged.

(d) The following restrictions shall pertain to the storage of materials and equipment within the floodplain.

(1) The storage of materials that are buoyant, hazardous, flammable, explosive, soluble, expansive radioactive or which could be injurious to human, animal or plant life is prohibited below the elevation of the base flood for a critical activity.

(2) Other material or equipment may be stored below the elevation of the base flood for a critical activity provided that such material or equipment is not subject to major damage by floods, and provided that such material or equipment is firmly anchored, restrained or enclosed to prevent it from floating away.

(Effective April 30, 1987)

Sec. 25-68h-3. Stormwater management standards

(a) On-site stormwater management.

(1) The stormwater management plans for state activities shall be prepared so as to minimize any adverse increases to the peak flow rate, the timing of runoff and the volume of runoff. Hydrology studies shall be conducted at a level of detail commensurate with the probable impact of the project.

(A) A complete runoff hydrograph evaluation is required for (i) Basin Stormwater Management Plans pursuant to Section 25-68h-3 (h), (ii) Stormwater management plans for project sites resulting in significant impacts, and (iii) other state activities and critical activities as determined by the Commissioner. Hydrograph evaluations shall be conducted for existing and anticipated land use conditions for storms with average return frequencies of 2, 10 and 100 years. Where appropriate, the hydrograph analysis shall include determination of runoff for each subwatershed and routing runoff through storage impoundments and floodplain storage areas. The timing sequence of the runoff must be fully developed.

(B) Where suitable records exist, hydrographs should be developed from historic gauged flood data. For other watercourses, the hydrographs shall be developed from deterministic rainfall-runoff techniques and compared with flood flows of similar gauged watersheds and an assessment made as to the need to calibrate the hydrograph based on this comparison.

(2) Stormwater management plans for project sites shall be coordinated with Basin Stormwater Management Plans, where available.

(b) **Stormwater detention facilities**

Facilities to temporarily store excess storm runoff shall be subject to the following requirements:

(1) Any detention facility whose failure could cause significant damage or loss of life shall be regulated as a dam pursuant to Sections 22a-401 through 22a-409 of the General Statutes.

(2) All detention facilities serving a watershed larger than 10 acres in size shall be analyzed with hydrograph and storage routing techniques.

(3) The release rates from detention facilities shall be consistent with the Basin Stormwater Management Plan for the watershed in which it is located, or comply with items 4, 5 and 6 below if there is no Basin Stormwater Management Plan.

(4) The release rate shall consider the existing and proposed flow rates at the site and downstream channels or structures, and the timing of runoff from other subwatersheds within the basin for the base flood.

(5) The waters released from a detention facility shall not increase the peak flow rate at offsite downstream points unless they have adequate flow capacity for the base flood.

(6) Extended duration detention facility discharges directly into alluvial or eroding channels shall not exceed the bankfull capacity or the 2 year flood frequency flow, whichever is less, unless it is determined said channel will be stable.

(7) Section 8E of the "Connecticut Guidelines for Erosion and Sediment Control" (1985) as may be amended, shall be used as a guide to construction details and materials.

(8) An operation and maintenance schedule shall be prepared for every detention facility identifying responsibilities and items of routine maintenance, after use and emergency operations in the event of a flood.

(c) **Storm Drainage Systems.**

All subsurface storm drainage systems shall be designed in accordance with the methods and procedures defined in the Connecticut Department of Transportation Drainage Manual prepared by the Division of Design, Bureau of Highway, as may be amended and shall meet the following requirements:

(1) Storm drainage systems for parking lots, driveways, and roads shall be designed for a ten year frequency storm without closing use of the facility.

(2) The design of storm drainage systems for depressed roads and driveways shall comply with the DOT Drainage Manual.

(3) Use of curbing shall be minimized in order to encourage overland disburshed flow through stable vegetated areas.

(4) The hydrology and hydraulic design of catch basins, gutters, and storm drain pipes shall comply with the DOT Drainage Manual.

(5) Design computations shall be prepared on the appropriate forms contained in the DOT Drainage Manual.

(6) The foundation drains and floor drains of buildings connected into storm drainage systems shall be designed to prevent backflow for the 100 year frequency flood into the building.

(7) Surface runoff shall be directed through vegetated filter strips or grass swales wherever possible prior to storm drain inlets.

(8) The design of the storm drainage system should be coordinated with the soil erosion and sediment control plan.

(9) Storm drainage discharges shall be coordinated with the National Pollution Discharge Elimination System permit program administered by the Water Compliance Unit of DEP.

(10) Storm drainage systems discharging into watercourses tributary to public water supply reservoirs shall be in compliance with the Public Health Code.

(11) Storm drains shall be extended to a suitable discharge point into a watercourse or public drainage system, or to where drainage rights have been secured.

(d) Open Channels.

The analysis and design of open channels shall be consistent with the type of channel and its intended purpose. Channels shall be classified as local drainage channels or as watercourse channels, depending on use, and shall be classified as alluvial or non-alluvial based upon their geologic characteristics.

(1) Type A open channels are local drainage channels with a primary purpose of conveying urban, parking lot and road runoff from small watersheds, frequently with intermittent flow and limited ecological value and are intended to convey their design flow within their banks. They shall be designed in accordance with Section 12.02, 12.03, and 12.04 of the DOT Drainage Manual and:

(A) Freeboard allowances shall be provided in proportion to the potential damages that could occur in the event of overtopping;

(B) The use of impervious linings is discouraged except for very high velocity flow and steep slopes;

(2) Type B open channels are natural perennial watercourses or man made channels planned to simulate a natural watercourse. They shall be designed in accordance with Section 12.05 of the DOT Drainage Manual and the following where appropriate:

(A) Shall have minimum flow capacity of a flood equal to at least 25 year frequency flood.

(B) Shall have an inner channel to concentrate low flows with a capacity of a 2 year frequency flood.

(C) Shall have water surface profiles prepared for the 2, 25, and 100 year frequency floods.

(D) Shall consider the hydraulic capacity of floodplains.

(E) Shall have a sediment transport capacity similar to upstream and downstream channels.

(F) Shall be designed to minimize the use of artificial linings for flows in excess of the two year frequency flood.

(G) Shall encourage ecological productivity and variety.

(H) Shall be visually compatible with its surroundings.

(I) The alignment and slope shall be compatible with natural channels in similar site conditions.

(J) Variations in width, depth, invert evaluations, and side slopes are encouraged for aquatic and visual diversity.

(K) Straightening channels and decreasing their length is discouraged.

(L) The cross sections used to define the channel and floodplain geometry for water surface profile computations shall be located upstream and downstream of hydraulic structures, at changes in bed slope or cross section shape, and generally at intervals of not more than ten times the width of the 100 year floodplain.

(M) The friction coefficients used in the hydraulic analysis are to assume maximum seasonal vegetation conditions, and should be adjusted to the depth of flow.

(3) Channel restoration plans shall be prepared for all open channel work. The plan shall help restore and/or create an aquatic habitats suitable for fisheries, while maintaining or improving water quality, recreation, aesthetics and flow capacity. Coordination with the Fisheries and Wildlife Units of DEP is recommended. The channel restoration plan shall include, as appropriate:

(A) Avoidance of barriers to fish movement;

(B) Formation of pools and riffles;

(C) Provision for areas of sheltered flow with use of deflectors, boulders, low check dams;

(D) Preservation of stream bank vegetation and establishment of new vegetation;

(E) Use of clean natural bed materials of a suitable size;

(F) Schedule work to minimize conflicts with spawning, stocking, and fishing seasons; and

(G) Removal of excess debris.

(4) The design of rock riprap in channels with uniform flow shall be based upon the tractive force methods defined in both the DOT Drainage Manual and the Connecticut Guidelines for Erosion and Sediment Control.

(5) The hydraulic analysis and modification of watercourses prone to ice jams or floods due to ice should be coordinated directly with the Department of Environmental Protection.

(6) The watersurface profiles of open channels in coastal areas shall consider the potential combined occurrence of tides, storm surges, and peak runoff. The starting water elevation for the base flood in watersheds with time of concentrations of over 6 hours shall be the ten year frequency tidal surge level.

(e) Culverts and Bridges.

All drainage culverts and bridges shall be designed in accordance to the methods and procedures defined in the DOT Drainage Manual and shall meet the following requirements:

(1) Culverts and bridges will be designed for flood frequencies and underclearances stipulated in the DOT Drainage Manual, except that on local (not state highways) roads and driveways with low traffic volumes and where alternate routes are available, lower design criteria is acceptable when:

(A) Flood discharges may be allowed to cross over roads that are at or close to the floodplain grade.

(B) Water surface elevations shall not be increased by more than one foot, nor allowed to cause damage to upstream properties.

(C) Provisions are made to barricade the road when overtopped.

(D) The road or driveway is posted as being subject to flooding.

(2) Bridges and culverts along stocked watercourses and watercourses which may support fish shall be designed to allow passage of fish as may be recommended by the Department of Environmental Protection Fisheries and Wildlife Units.

(3) The location of new bridges and culverts shall minimize the relocation of watercourses.

(4) Where applicable, rigid structural floors at bridges and culverts should be depressed below the normal streambed, to allow an alluvial streambed to form over them, and shall anticipate if the streambed is degrading.

(5) The use of solid parapet walls at bridges and culverts located in the sag part of vertical curves is discouraged.

(6) Debris barriers shall be used upstream of structures prone to blockage by debris.

(7) The use of a single large culvert or bridge opening is preferred over use of multiple small openings.

(8) The underclearances and maximum headwaters stipulated in the DOT Drainage Manual may be waived when decreasing the headwater depth at existing structures could increase downstream peak flows.

(f) **Standard Conditions for Approval.**

(1) All construction work shall incorporate best management practices to minimize soil erosion and sedimentation and conform with the "Connecticut Guidelines for Soil Erosion and Sediment Control."

(2) All fill shall be clean, material free of stumps, rubbish, hazardous, and toxic material.

(3) Contractor shall remove equipment and materials from the floodplain during periods when flood warnings have been issued or are anticipated by a responsible federal, state or local agency. It shall be the contractors responsibility to obtain such warnings when flooding is anticipated.

(4) Contractor shall notify the Commissioner seven days prior to starting work on-site.

(5) Once work is initiated, it shall proceed rapidly and steadily until completed and stabilized in order to minimize use of temporary structures and to minimize soil erosion.

(6) Work shall not be conducted in or adjacent to watercourses and reservoirs used as public drinking water supply sources without further coordination with the water supply utility and Department of Health Services.

(7) All temporary structures, cofferdams, and fill shall not impede the movement of flood flows and shall be removed at the completion of their use. The design of such temporary structure, cofferdams and fill shall be based on Chapter 18 of the DOT Drainage Manual, where applicable.

(8) The applicant or his agent shall permanently maintain the proposed facility.

(g) **Basin Stormwater Management Plans.**

Basin stormwater management plans shall be prepared at the scale of the subregional drainage basins as defined on the map entitled "Natural Drainage Basins of Connecticut" prepared by the Department of Environmental Protection dated 1981 or as amended. Basin stormwater management plans shall include:

(1) Watershed identification, surficial geology, and land use.

(2) Inventory of flood hazard areas as identified by Flood Insurance Studies or the Commissioner, plus historic floods and damages.

(3) An evaluation of watercourses, including areas of limited flow capacity, bank or bed erosion, sediment deposition, water quality, principle water uses and users, recreation areas, morphology classification, and channel stability.

(4) An inventory and evaluation of hydraulic structures, including culverts, bridges, dams and dikes with information on their flow capacity and physical condition.

(5) An inventory of significant flood water storage areas, including principle impoundments, floodplains, and wetlands.

(6) A runoff hydrograph analysis of the watershed for floods of an appropriate duration, including a 24 hour event, with average return frequencies of 2, 10 and 100 years for existing and future land uses.

(7) The relationship between the computed peak flow rates and gauging station data, with modification or calibration of the hydrographs to obtain a reasonable fit where necessary.

(8) Identification of the peak rate of runoff at various key points in the watershed, and the relative timing of the peak flow rates.

(9) Identification of points in the watershed where hydraulic structures or watercourses are inadequate under existing or anticipated future conditions.

(10) Recommendations on how the subwatersheds runoff can be managed to minimize any harmful downstream impacts.

(11) Generalized recommendations for physical improvements for existing or anticipated future problem areas.

(12) A copy of each Basin Stormwater Management Plan shall be filed with the DEP.

(13) Stormwater management plans for Public Water Supply watersheds shall be coordinated with the Connecticut Department of Health Services and any affected water utility company.

(Effective April 30, 1987)

TABLE OF CONTENTS

Soil Conservation

Repealed 25-104-1—25-104-11

Soil Conservation

Secs. 25-104-1—25-104-11.

Repealed, October 13, 1976.

TABLE OF CONTENTS

**Establishment of Connecticut Council on
Soil and Water Conservation**

Repealed 25-104a-1—25-104a- 3

Establishment of Soil and Water Conservation Districts

Repealed 25-104a-4—25-104a-10

**Establishment of Connecticut Council on
Soil and Water Conservation**

Secs. 25-104a-1—25-104a-3.

Repealed, June 23, 1986.

Establishment of Soil and Water Conservation Districts

Secs. 25-104a-4—25-104a-10.

Repealed, June 23, 1986.

TABLE OF CONTENTS

Construction of Dams

Definitions	25-110-1
Construction permit	25-110-2
Construction plans	25-110-3
Inspection during construction. Certificate of approval	25-110-4

Construction of Dams

Secs. 25-110-1—25-110-4.

Repealed. (Effective September 29, 1970.)

TABLE OF CONTENTS

Description of Organization, Rules of Practice, and Regulations for the Well Drilling Industry

Repealed 25-128-1—25-128-32

Title of regulations 25-128-33

Purpose of regulations 25-128-34

Scope of regulations 25-128-35

Definitions. 25-128-36

Manner of construction 25-128-37

Application of public health code 25-128-38

Adequate relations of diameter, depth, and yield 25-128-39

Pumps and pumping equipment 25-128-40

Location and protection of wells 25-128-41

Drilling, general. 25-128-42

Casing of drilled wells 25-128-43

Length of casing, drilled wells 25-128-44

Length of casing, gravel wells 25-128-45

Well screens. 25-128-46

Gravel packed wells, gravel 25-128-47

Gravel packed wells, construction 25-128-48

Annular space. 25-128-48a

Well head completion and equipment 25-128-49

Plumbness and alignment of wells 25-128-50

Tests of yield 25-128-51

Disinfection of wells 25-128-52

Construction of non-water supply wells 25-128-53

Maintenance and repair of wells and pumping equipment 25-128-54

Promulgation of construction standards 25-128-55

Period of responsibility 25-128-55a

Abandonment of wells, responsibility 25-128-56

Procedure of abandonment 25-128-57

Repealed 25-128-58—25-128-60

Contractor-limited to well water-supply drilling W-1 25-128-58a

Contractor-limited to well non water-supply drilling W-3 25-128-58b
Well driller-limited to well water-supply drilling (W-2) 25-128-60a
Well driller-limited to well non-water-supply drilling W-4 25-128-60b
Permit requirements. 25-128-61
Contents of permit application 25-128-62
Exemption from construction standards 25-128-63
Emergency permits 25-128-64

Description of Organization, Rules of Practice, and Regulations for the Well Drilling Industry

Secs. 25-128-1—25-128-32.

Repealed, May 21, 1993.

Sec. 25-128-33. Title of regulations

These regulations, together with the regulatory provisions of Chapter 482 of the General Statutes, and the section of the Public Health Code relating to wells, shall be collectively known as the Connecticut Well Drilling Code.

(Effective September 27, 1978)

Sec. 25-128-34. Purpose of regulations

The purpose of the regulations shall be to govern the construction, repair, development, and abandonment of wells, in order to safeguard the public health and to provide an adequate supply of clean and uncontaminated water for all persons in the state of Connecticut.

(Effective May 21, 1993)

Sec. 25-128-35. Scope of regulations

(a) **Well Contractors and Drillers.** The regulations shall apply to any person who engages in the industry, procedures, or operation, full time or part-time, for compensation or otherwise, of obtaining water from a well or wells by drilling, or other methods. A well drilling contractor is any person regularly offering to the general public the services of his employees or himself in the industry of obtaining water from a well for any purpose or use.

(b) **Abandoned wells.** The regulations shall apply to any person who abandons and permanently discontinues the use of a well, or to any person who is responsible by law for the abandonment of a well except as provided by Section 25-134 of the General Statutes.

(c) **Special exception for farmers.** The regulations shall not require a person who constructs a well on his own or leased property, intended for use only for farming purposes on his farm, to obtain a certificate of registration or a permit, as provided by Section 25-132 of the General Statutes.

(d) **Well development.** The regulations shall apply to any person who performs work on a well for the purpose of increasing the yield of a well or otherwise improving the quality or quantity of water that might be obtained from the well.

(e) **Non water-supply wells.** Pursuant to Section 25-133 of the General Statutes, non water-supply wells are exempt from these regulations except for sections 25-128-35, 25-128-58b, and 25-128-60b. Non water-supply wells shall be constructed according to the public health code, and any and all municipal ordinances. For the purposes of these regulations the term “non water-supply well” includes piezometers, containment recovery wells and monitor wells.

(Effective May 21, 1993)

Sec. 25-128-36. Definitions

(a) Unless expressly stated otherwise, the following terms shall, for the purpose of the Connecticut Well Drilling Code, have the meanings indicated in this section.

(b) Words used in the present tense include the future; words used in the masculine gender include the feminine and neuter; the singular number includes the plural and the singular.

(c) Where the terms are not defined in this section or in Section 25-126 of the General Statutes, they shall have their ordinarily accepted meanings or such as the context may imply.

(1) Access port: A suitable opening into the well to allow measurement of water level.

(2) Annular space: The space between two objects, one of which is surrounded by the other. This includes the space between the wall of an excavation and the wall of a pit; between the wall of an excavation and the casing of a well; or between two casings.

(3) Aquifer: A water bearing earth material which can transmit water in significant quantity. It can be either consolidated rock, such as ledge rock, or unconsolidated material, such as sand, gravel, or soil with boulders.

(4) Artesian well: A well in which static water level rises above the top of the aquifer. The aquifer is confined by an impermeable geologic formation overlying the aquifer.

(5) Bentonite clay grout: A mixture of bentonite clay and water with not less than two pounds of bentonite clay for every gallon of water.

(6) Board: The State Plumbing and Piping Work Examining Board.

(7) Casing: A pipe placed in a well to prevent the walls from caving, or to seal off surface drainage and other contaminants, so that they cannot enter the well.

(8) Construction of well: All acts necessary to construct or repair wells for any intended purpose of use, including the location and excavation of the well, placement of casings, screens, and fittings, and well development and testing.

(9) Contamination: The act of introducing into water, foreign materials of such nature, quality, and quantity as to cause degradation of the quality of the water.

(10) Disinfection: The inactivation of harmful organisms present in water, through use of an accepted chlorine solution or other accepted disinfection material or procedure.

(11) Drawdown: The extent of lowering of the water table or piezometric surface within or adjacent to the well, resulting from the discharge of water from the well. Draw down is measured between the static water level and the pumping water level. The quantity of water available in the well from the static water level to the pump intake is known as the draw down available.

(12) Established ground surface: The permanent elevation of the surface of the ground at the site of the well after completion of grading, excavation; or other land movements.

(13) Ground water: Water encountered below the ground surface of the earth within the zone of saturation that can supply wells and springs.

(14) Grout or grouting material: A low permeability material placed in the annular space between the casing and the formation or within the borehole which is at least impermeable as the soil formation. The purpose of the grout is to resist the migration of pollutants into the annular space.

(15) Cement grouts: A mixture of portland cement, sand, and water. The mixture is usually composed of one bag of portland cement weighing ninety-four (94) pounds, an equal volume of dry sand, and five to six gallons of water.

(A) Neat cement grout: A mixture of not more than six gallons of clear water to one bag of portland cement.

(B) Sand cement grout: A mixture of not more than two parts sand to one part portland cement, and not more than six gallons of clear water to each bag of cement.

(C) Concrete grout: A mixture of portland cement, sand, gravel and water.

(D) Bentonite grout: mined processed bentonite clay.

(E) Bentonite cement grout: A mixture of cement grout or sand cement grout with approximately ten per cent (10%) bentonite added to reduce shrinkage.

(F) Natural grout: A mixture of water and natural materials excavated during drilling of the well. The materials shall be placed by whatever techniques are effective for the existing conditions to achieve maximum density, strength, and impermeability of the fill material.

(G) Sand clay grout: A mixture of bentonite clay and sand in equal proportions.

(16) Flowing artesian well: A well in which the static water level is higher than the top of the casing and water flows from the well.

(17) Installation of pumps and pumping equipment: The procedure employed in the placement and preparation for operation of pumps and pumping equipment, including all construction involved in making entrances to the well and to the building, establishing seals, installing pump piping, valves, wiring, electrical controls and tanks.

(18) Liner pipe: Pipe that is installed inside a completed and cased well for the purpose of sealing off undesirable water or for repairing ruptured or punctured casing or screens. The liner pipe and screens may be constructed of PVC schedule forty (40) plastic.

(19) Owner: Any person or his agent who holds the title or other rights of property where a well is constructed, repaired, or abandoned.

(20) Potable water: Water free from impurities in amounts sufficient to cause disease or other harmful physiological effects, with the minimum or maximum bacteriological, physical, and chemical composition as defined by the applicable laws and regulations of the Department of Health Services.

(21) Repair: Any work involved in the reaming, sealing, installing, changing of casing depths, perforating, screening, cleaning, acidizing, surging, hydrofracturing or other redevelopment of a well.

(22) Specific capacity: The yield of a well expressed in gallons per minute per foot of drawdown, as abbreviated "gpm/ft."

(23) Static water level: The depth to the surface of the water in a well measured from the land surface or other convenient, permanent, and specified datum, when no water is being discharged from the well and the water level has reached equilibrium.

(24) Water well: An artificial excavation or opening in the ground, by which ground water can be obtained or through which it flows under natural pressure or is artificially withdrawn.

(a) Well bored or augered: Any excavation made for water, or in exploration for water, using power driven equipment, where the drill consists of a continuous spiral of metal or a hollow cylinder or bucket attached to a shaft, and where the excavated material is brought to the ground service by upward movement along the surface of the spiral or removed by the bucket.

(b) Well gravel: A well constructed into unconsolidated material. In the zone immediately surrounding the well screen more permeability is obtained by hydraulic action or by removing the finer formation material and replacing it with artificially graded coarser material.

(c) Well drilled rock: A well drilled into consolidated rock in which that portion of the well drilled into the overlying unconsolidated material is supported by a casing.

(d) Well dug: A well excavated into a shallow aquifer.

(e) Well monitor: A well constructed for the purpose of aquifer testing, obtaining samples of ground water quality and/or measurement of ground water level.

(25) Well-seal: An approved arrangement or device used to cap a well or to establish and maintain a junction between the casing or curbing of a well and the pipe or equipment installed therein, the purpose or function of which is to prevent contaminants from entering a well at the upper terminal.

(26) Well vent: An outlet at the upper terminal of a well casing to allow equalization of air pressure in a well but at the same time so constructed as to avoid entry of water and foreign material into the well.

(27) Well yield: The quantity of water per unit of time which may flow or be pumped continuously from a well.

(28) Well hydrofracturing: A method of well development used to improve the specific capacity of new or existing drilled wells. Certain zones within the well are pressurized in excess of one hundred (100) psi with water in an effort to force open fractures in the bedrock.

(29) Well abandonment: Actions taken to ensure that a well which is no longer in use shall not be a source or conduit for contamination of ground water resources.

(30) Well contractor: A well drilling contractor is any person regularly offering to the general public the services of his employees or himself in the industry of obtaining water from a well for any purpose or use.

(31) Master well driller: A master well driller is any person experienced and skilled in the industry of obtaining water from a well for any purpose or use.

(Effective May 21, 1993)

Sec. 25-128-37. Manner of construction

The construction of any well shall be planned and carried out in a manner to guard against waste and contamination of ground water resources.

(Effective September 27, 1978)

Sec. 25-128-38. Application of public health code

The regulations for the construction of wells, as provided herein, shall be construed in a manner consistent with the provisions of Sections 19-13-B51 to 19-13-B51m, inclusive, of the Public Health Code. In the event any conflict shall appear, the interpretation of the regulations shall be made which affords the greater protection of the public health.

(Effective September 27, 1978)

Sec. 25-128-39. Adequate relations of diameter, depth, and yield

Wells shall be of adequate diameter and depth to be capable of yielding the quantity of water required by the user. For the use of an individual household, a bedrock well of six (6) inches in diameter shall be satisfactory when it is capable of yielding:

(a) five (5) gallons per minute and has a storage available of seventy-five (75) gallons or has a water column depth of one hundred (100) feet, whichever is greater;

(b) three and one half (3 1/2) gallons per minute and has a storage available of one hundred fifty (150) gallons or has a water column depth of one hundred fifty (150) feet, whichever is greater;

(c) two gallons (2) per minute and has a storage available of two hundred twenty-five (225) gallons or has a water column depth of two hundred (200) feet, whichever is greater;

(d) one gallon per minute and has a storage available of four hundred (400) gallons or has a water column depth of three hundred seventy-five (375) feet, whichever is greater;

(e) one half (1/2) gallon per minute and has a water column depth of four hundred fifty (450) feet or has a storage available of six hundred (600) gallons, whichever is greater.

(f) storage may be provided using combinations of hydropneumatic tanks and/or non-pressurized tanks with booster pumps.

(g) wells yielding less than one half (1/2) gallons per minute shall be pump tested for at least eighteen hours (18) to prove the well yield. It is not recommended that a well with less than one half (1/2) gallon be used as the only supply for an individual household.

In the event, however, that in the opinion of the Board, special or unusual geological, hydrological, or other circumstances shall exist in the construction of any well, the Board may determine the minimum requirements of diameter, depth, and yield for the well.

(Effective May 21, 1993)

Sec. 25-128-40. Pumps and pumping equipment

(a) Pumps and pumping equipment shall be installed in the well to make the most efficient use of well storage.

(b) Pumps and pumping equipment shall be located to permit convenient access for inspection, maintenance and repair.

(c) In the event the base plate of a pump is placed directly over the well, the base plate shall be of a type designed to form a watertight seal with the well casing or pump foundation, as provided by Section 19-13-B51j of the Public Health Code.

(d) The well shall be properly vented at the well head to allow for pressure changes within the well.

(e) The electrical wiring used in connection with the pump shall conform to specifications of the State Basic Building Code.

(f) Contaminated water shall not be used for the purpose of priming any pump.

(Effective May 21, 1993)

Sec. 25-128-41. Location and protection of wells

The location of any well upon premises shall be subject to approval by the local health officer of the municipality in which the said premises are located, and shall be as provided by Section 19-13c of the General Statutes, and by Sections 19-13-B50 to 19-13-B51, inclusive, of the Public Health Code.

(Effective September 27, 1978)

Sec. 25-128-42. Drilling, general

(a) The well shall be so constructed that a pump of capacity equal to the desired yield can be installed and operated for different yields.

(b) Any water used shall be disinfected or of drinking water quality.

(c) Any chemicals or other additives used in drilling shall be cleaned out from the well.

(d) Rock cuttings shall be cleaned out of the well.

(e) The well shall be tested as provided by Section 19-13-B51 of the Public Health Code.

(f) The well driller shall prepare and maintain a log on forms supplied by the Board, and shall submit copies of the log to the Board and to the owner or owners of the well, respectively. The log shall clearly identify the location of the well upon the premises.

(g) Well development shall be performed only by properly registered persons.

(h) Subcontracted work shall be performed only by properly registered persons.

(i) No solder containing more than 0.2 per cent lead shall be used in making joints and fittings in any public or private potable water supply system or any water user's pipelines.

(Effective May 21, 1993)

Sec. 25-128-43. Casing of drilled wells

(a) The bottom end of the primary casing shall be equipped with a hardened drive shoe of the appropriate size.

(b) The casing shall extend at least six (6) inches above the land surface. Annular space shall be grout filled from the frost level to the bottom of the casing, except that, where special or unusual conditions exist, the annular space shall be grout filled from the frost level to a distance of at least ten (10) feet below the land surface.

(c) Upon completion of the well unit and until such time as the well is equipped with a pump, the top of the casing shall be a metal cap fixed to prevent unwaranted access.

(d) The primary casing shall be new steel and shall be free of pits, breaks, or other serious imperfections. All casing pipes and couplings used shall have minimum weights and wall thicknesses per diameter, as specified in Table 1.

(e) In the event casing pipes are assembled together, they shall be joined by means of watertight welded joints, screw coupling joints, or slip joints. In the use of welded joints, the weld shall be at least as thick as the wall thickness of the well casing.

(f) In the event the diameter of a casing is reduced at any point along its length, the annular space between the larger and smaller casings shall be made watertight.

(Effective May 21, 1993)

Sec. 25-128-44. Length of casing, drilled wells

A twenty (20) foot minimum length of casing pipe shall be required in the construction of any drilled well, subject to the following exceptions for specific, geological and hydrological conditions:

(a) All unconsolidated overburden and other loose, caving zones shall be cased.

(b) The casing pipe shall extend at least five (5) feet into the bedrock, as shown by Figure 1.

(c) In the event, however, that the overburden or the upper five (5) feet of the bedrock constitute the primary potable water producing zones, the requirement of length of subsection (b) shall not apply.

(d) In the condition of the presence of caving zones, the casing pipe or other adequate protective seal shall extend as great a distance below the caving zone as the driller deems necessary to insure well stability.

(e) In the event geological conditions require telescoping of the casing pipe and the use of linear pipe, the respective lengths and diameters necessary to accomplish effective drilling shall be used, the annular spaces shall be made watertight where appropriate to prevent the travel of contaminants.

(Effective May 21, 1993)

Sec. 25-128-45. Length of casing, gravel wells

(a) The length of the casing in a gravel well shall be such that the pumping level does not drop below the top of the screen.

(b) In conditions of aquifers alternated with silt clay and other undesirable zones, the casing shall extend at least two (2) feet into the aquifer underlying the cased zones, as shown by figure 2.

(c) In conditions of aquifer overlain by layers of clay, silt, fine sand, or any other sand that cannot be developed for ground water, the casing pipe shall extend at least five (5) feet into the aquifer. But if the aquifer thickness is less than five (5) feet, the casing shall extend into the aquifer as much as feasible to serve the general purpose of casing, as shown by Figure 3.

(d) In conditions of aquifer overlain by till, the casing pipe shall extend at least five (5) feet below the bottom of the till. But if the aquifer is less than five (5) feet thick, the casing shall extend into the aquifer as much as feasible to serve the general purpose of casing, as shown by Figure 4.

(e) In conditions of aquifer overlain by clay, the casing shall extend at least five (5) feet below the bottom of the clay. But if the aquifer is less than five (5) feet thick, the casing shall extend into the aquifer as much as feasible to serve the general purpose of casing, as shown by Figure 5.

(f) In conditions of aquifer overlain by unconsolidated material without clay beds, the length of the casing shall be such that the pumping water levels do not drop below the top of the screen.

(g) In the event the aquifer consists of very coarse gravel and no screen is used, the casing pipe shall extend into the aquifer as much as feasible to develop the required quantity of water.

(Effective May 21, 1993)

Sec. 25-128-46. Well screens

(a) Any well constructed to obtain water from an unconsolidated formation may be equipped with a screen, for the purpose of preventing the entrance of formation material into the well after the well has been developed and completed.

(b) The well screen shall: (1) be of a standard design and manufacture, for the specific purpose of well construction; (2) be made of material adequate to withstand normal physical and chemical forces, applied to it during and after installation; (3) shall have openings free of rough edges, irregularities, or other defects that may contribute to corrosion or clogging; and (4) shall be provided with such fittings as are necessary to seal the top of the screen to the casing and to close the bottom.

(c) Any well constructed in very coarse gravel shall not, however, be required to have a screen; or, if a screen is used, the bottom may be left open.

(d) Any well constructed with multiple screens shall not connect aquifers or zones which have differences in water quality, classification or which maintain different piezometric surfaces.

(Effective May 21, 1993)

Sec. 25-128-47. Gravel packed wells, gravel

(a) The gravel in a gravel packed well shall be composed of material that does not react chemically with the water in the well, and will not create or enhance encrustation or corrosion.

(b) The gravel shall be clean, rounded, uniform, water-washed, and free from clay, silt, or other deleterious substance.

(c) The size of the gravel shall be as determined by a grain size analysis of the formation material.

(d) The gravel shall be disinfected by adding sufficient chlorine to the placement fluid to produce a chlorine residual of approximately one hundred parts per million (100 ppm).

(e) The gravel shall be placed in such a manner that no bridging or layering occurs.

(f) The gravel pack shall not connect aquifers or zones which have differences in water quality classification or in static water levels.

(Effective May 21, 1993)

Sec. 25-128-48. Gravel packed wells, construction

In a gravel packed well in which the top of the gravel does not extend inside the outer casing, a cement grout plug of at least five (5) feet in thickness shall be placed in the annular space directly on top of the gravel. The remaining space shall be filled with grout except that the upper ten (10) feet below the frost level shall be filled with cement grout. Centering guides shall be attached to pipe extensions about the well screen and to blank pipes separating different screened sections. The gravel filled pipes shall be properly capped.

(Effective May 21, 1993)

Sec. 25-128-48a. Annular space

(a) Any annular space between the outside of the casing and the natural materials penetrated by the well shall be filled with suitable material to make this space as impervious to the movement of fluids and competent to support the casing as are the natural materials surrounding the well. The driller may fill the annular space with the natural materials excavated during the drilling of the well to meet the following requirements:

(1) the annular space shall be fitted as completely as possible from the bottom of the casing to the land surface without any depressions, voids, holes or channels;

(2) the driller shall employ whatever techniques are effective for the existing conditions to achieve maximum density, strength and impermeability of the fill material; and

(3) the surface of the fill material shall be sloped away from the casing.

(b) In cases where potentially contaminating or corrosive fluids are encountered, or impermeable natural materials cannot be adequately placed and compacted to where geologic conditions or the isolation distance may not be adequate, the annular space shall be grouted for the full length of the casing, or the portion thereof below the frost line or pitless adaptor, so that no fluids may move in the zone needing to be grouted.

(Effective May 21, 1993)

Sec. 25-128-49. Well head completion and equipment

The completion of the well head and the equipment used shall be as follows:

(a) The top of the casing shall be cut off reasonably smooth and level.

(b) In the event the well head is enclosed, the enclosure shall be adequately drained. In the event a well pit is used, it shall be drained in the manner provided by Section 19-13-B51 of the Public Health Code.

(c) All water piping shall be protected against freezing.

(d) The well shall be equipped with a tightly fixed vented cap or a sanitary seal with an access port for ventilation. The access port shall have a minimum, inside diameter of one quarter (1/4) inch. It shall be installed and maintained in such a manner as to prevent the entrance of water, dust, insects, or other foreign material, and to permit ready access for the purpose of water level measurement.

(Effective May 21, 1993)

Sec. 25-128-50. Plumbness and alignment of wells

All gravel packed wells, and all wells equipped with pumps having vertical shafts that require plumbed and aligned walls, shall be tested for plumbness and alignment in accordance with standards of the American Water Works Association.

(Effective September 27, 1978)

Sec. 25-128-51. Tests of yield

All water supply wells shall be tested for yield and capacity, as provided by Section 19-13-B51 K (b) of the Public Health Code, and all static and pumping water levels and well discharge shall be measured and recorded, with the pumping rate held constant. The test shall be made by one of the following methods: the pump method, the bailer-recovery method, the air rotary drill method, or the air lift method. For wells serving a single family the well may be tested for yield by removing as much water as is practicable from the well and measuring the rate of recovery.

(Effective May 21, 1993)

Sec. 25-128-52. Disinfection of wells

All wells shall be disinfected by chlorination as provided by Section 19-13-B 51 K (c) of the Public Health Code.

(Effective September 27, 1978)

Sec. 25-128-53. Construction of non-water supply wells

All wells used for other purposes than the supply of water for human consumption shall be constructed, repaired, and maintained in such a manner that they are not a source or cause of ground water contamination.

(Effective September 27, 1978)

Sec. 25-128-54. Maintenance and repair of wells and pumping equipment

All wells shall be maintained in a proper condition to conserve and protect ground water resources, and shall not be a source or cause of contamination or pollution of the water supply of any aquifer. All materials and construction practices used in the maintenance, repair, or replacement of any well shall be the same as those required for the construction of a new well. All maintenance, repair, hydrofracturing, developing, and replacement work shall be done only by a registered well driller, or by a licensed plumber or electrician, as provided by Section 25-129 of the General Statutes, and Articles 5 and 6 of the regulations.

(Effective May 21, 1993)

Sec. 25-128-55. Promulgation of construction standards

The regulations for the construction, maintenance, and repair of wells, as provided herein shall be promulgated in cooperation with the State Department of Health Services and the Department of Environmental Protection.

(Effective September 27, 1978)

Sec. 25-128-55a. Period of responsibility

The well drilling contractor shall be responsible for a period of one (1) year from the date of completion of work performed on the well to insure that the physical construction of the well meets the requirements of this code. The contractor shall not be responsible if work has been performed on the well by others, or if activities by others in the vicinity of the well have adversely affected the well.

(Effective May 21, 1993)

Sec. 25-128-56. Abandonment of wells, responsibility

Any well that is abandoned shall not be a source or cause of contamination or pollution of ground water resources. Abandonment procedures shall be performed or directed only by a registered well driller. The registered well drilling contractor who performs the work of abandonment shall be responsible for compliance with the procedure of abandonment of the well, as provided in this part and shall notify the local health authority of the abandonment of the well.

(Effective May 21, 1993)

Sec. 25-128-57. Procedure of abandonment

In the event of abandonment of any water well or other type of well the proper procedure and materials shall be used as follows:

(a) The well shall be plugged to prevent the entrance of surface water, circulation of water between or among producing zones, or any other process resulting in the contamination or pollution of ground water resources.

(b) In the event of temporary abandonment or discontinuance of the use of any well, the well shall be sealed with a watertight cap or seal, as provided by Section 25-128-42 (c).

(c) The well shall be chlorinated prior to abandonment using a chlorine solution with a minimum concentration of one hundred fifty parts per million (150 ppm) of chlorine. This is equivalent to 5.5 quarts of bleach at 2.25% available chlorine to five hundred (500) gallons of water or three hundred thirty-three (333) feet of six (6) inch diameter well.

(d) The well shall be checked from land surface to the entire depth of the well before it is sealed, to insure against the presence of any obstruction that will interfere with sealing operations.

(e) The well bore shall be filled and sealed with any of the following materials: heat cement grout, sand cement grout, bentonite clay grout, or sand clay or bentonite cement grout.

(f) The grout material shall be placed in such a way to prevent voids in the grout or dilution of the grout.

(g) Any well constructed in a consolidated rock formation, may be filled with fine sand in the zone or zones of consolidated rock. The top of the sand fill shall be at least ten (10) feet below the bottom of the casing, and the remaining portions of the well shall be filled with any of the materials specified in subsection (e).

(h) Any test well or bore shall be abandoned in such a manner that it does not become a channel for the vertical movement of water or other substance to the potable ground water resources.

(i) Deep waste disposal or oil wells with casings free of any breaks, and extending below the potable ground water zones, may be sealed with a watertight cap or welded plate.

(j) Upon completion of abandonment of the well, the top of the casing or grout material may be terminated at least four (4) feet below the ground surface.

(Effective May 21, 1993)

Sec. 25-128-58.

Repealed, May 21, 1993.

Sec. 25-128-58a. Contractor-limited to well water-supply drilling W-1

As provided by Section 25-129 of the General Statutes, the Board hereby establishes certain requirements for the registration of well drilling contractors. This

registration permits the registrant to construct a well, including but not limited to, the installation, repair and maintenance of pumps, pump motors, pump piping, valves, wiring, electric controls and tanks. Before any registration is issued to any individual the Board shall require that the applicant submit:

(1) His full, legal name, street address, city, state and zip code;

(2) A certificate of liability insurance specifying well drilling purposes and providing liability coverage for bodily injury of at least one hundred thousand dollars (\$100,000) per person with an aggregate of at least three hundred thousand dollars (\$300,000), and for property damage of at least fifty thousand dollars (\$50,000) per accident with an aggregate of at least one hundred thousand dollars (\$100,000);

(3) Documentation that he has been actively engaged in the well drilling trade as a well driller for a period of thirty-six (36) months prior to the date of his application and/or has held a valid W-2 registration for at least two years;

(4) The name(s) and address(es) of his employee(s) who holds a master driller registration;

(5) Letters of references from a Connecticut registered well contractor, a local public health official and one (1) other responsible citizen which attest to the applicant's integrity and ability to act as a well driller; and

(6) He shall be found in compliance with all provisions of subsection (e) (1) of section 25-129 of the General Statutes, concerning his conduct in the well drilling industry.

(Effective May 21, 1993)

Sec. 25-128-58b. Contractor-limited to well non water-supply drilling W-3

As provided by Section 25-129 of the General Statutes, the Board hereby establishes certain requirements for the registration of well drilling contractors. This registration permits the registrant to construct a well, including but not limited to, the installation, repair and maintenance of pumps, pump motors, pump piping, valves, wiring, electric controls and tanks. Before any registration is issued to any individual the Board shall require that the applicant submit:

(1) His full, legal name, street address, city, state and zip code;

(2) A certificate of liability insurance specifying well drilling purposes and providing liability coverage for bodily injury of at least one hundred thousand dollars (\$100,000) per person with an aggregate of at least three hundred thousand dollars (\$300,000), and for property damage of at least fifty thousand dollars (\$50,000) per accident with an aggregate of at least one hundred thousand dollars (\$100,000);

(3) Documentation that he has been actively engaged in the well drilling trade as a well driller for a period of thirty-six (36) months prior to the date of his application and/or has held a valid W-4 registration for at least two years;

(4) The name(s) and address(es) of his employee(s) who holds a master driller registration;

(5) Letters of references from a Connecticut registered well contractor, a local public health official and one (1) other responsible citizen which attest to the applicant's integrity and ability to act as a well driller; and

(6) He shall be found in compliance with all provisions of subsection (e) (1) of section 25-129 of the General Statutes, concerning his conduct in the well drilling industry.

(Effective May 21, 1993)

Secs. 25-128-59—25-128-60.

Repealed, May 21, 1993.

Sec. 25-128-60a. Well driller - limited to well water-supply drilling (W-2)

The requirements for this registration shall be three (3) years as an apprentice driller or possesses equivalent experience and training. This registration permits the registrant to construct a well, including but not limited to, the installation, repair and maintenance of pumps, pump motors, pump piping, valves, wiring, electric controls and tanks only while the registrant is in the direct and regular employment of a contractor registered for such work. The applicant shall demonstrate his knowledge of well drilling by passing a written examination conducted pursuant to Sections 21a-7 (1) and 21a-8 (5) of the General Statutes.

(Effective May 21, 1993)

Sec. 25-128-60b. Well driller - limited to well non-water-supply drilling W-4.

The requirements for this registration shall be three (3) years as an apprentice driller or possess equivalent experience and training. This registration permits the registrant to construct a well, including but not limited to, the installation, repair and maintenance of pumps, pump motors, pump piping, valves, wiring, electric controls and tanks only while the registrant is in the direct and regular employment of a contractor registered for such work. The applicant shall demonstrate his knowledge of well drilling by passing a written examination conducted pursuant to Sections 21a-7 (1) and 21a-8 (5) of the General Statutes.

(Effective May 21, 1993)

Sec. 25-128-61. Permit requirement

(a) Before commencing work on the construction, repair, development, hydrofracturing or abandonment of any well, a registered well contractor shall apply to the Board for a permit, as provided by Section 25-130 of the General Statutes. The applicant shall be required to agree by his signed, written oath that all work under the permit shall be done in strict compliance with the Connecticut Well Drilling Code, unless a special exemption from one or more of the regulations of the Board has been granted.

(b) The contractor shall then submit the completed, signed permit application with the proper fee to the local director of health or his agent who shall approve such permit if said proposed well conforms to the public health code. No well shall be drilled until such a permit has been issued and approved.

(c) Water supply well permits shall be evaluated according to their content with regard to proper separating distances as outlined in the public health code.

(Effective May 21, 1993)

Sec. 25-128-62. Contents of permit application

The application for a permit by a registered well driller shall include an appropriate map or plot plan, showing the location of the proposed well and the premises on which the well is located, in relation to roads, intersections, and other permanent land features. All permit applications shall be signed by a master driller, as representative of the registered well-drilling contractor.

(Effective September 27, 1978)

Sec. 25-128-63. Exemption from construction standards

As provided by Section 25-133 of the General Statutes, as amended, where the Board finds that compliance with the regulations and construction standards adopted herein would result in undue hardship, an exemption from any one or more of the standards may be granted by the Board to the extent necessary to ameliorate such

undue hardship, and to the extent such exemption can be granted without impairing the intent and purpose of the regulations. An application for a special exemption shall be made at the office of the Board, and shall be in writing on a form to be supplied by the Board. The application shall include all information regarding circumstances and conditions of construction of the well as the Board deems necessary. The decision of the Board to grant or deny the exemption requested, in whole or in part, shall be made within thirty (30) days, and the Board shall notify the applicant by certified mail of its decision.

(Effective September 27, 1978)

Sec. 25-128-64. Emergency permits

Notwithstanding any provision of this article, the Board may grant a permit for the construction, repair, or abandonment of any well by its informal, verbal authorization, if it determines that an emergency situation exists with respect to the necessity for the construction, repair, or abandonment of the well. The well drilling contractor shall also obtain the approval of the local director of health or his agent, for the work intended to be done. Within a reasonable time after giving its authorization, the Board shall require that a written application for a permit, and, if necessary, a written application for a special exemption shall be made, in compliance with the provisions of this article and Sections 25-130 and 25-133 of the General Statutes. In the event the formal application for the permit or exemption is refused, the well drilling contractor shall, upon written notification by the Board, immediately cease all work on the well.

(Effective September 27, 1978)

Table 1
CASING PIPE WEIGHTS AND DIMENSIONS

Size In Inches	Wt. Lbs. Per Ft. Threads and Couplings	Pipe			Threads per Inch	Couplings	
		Thickness in Inches	Diameter-Inches			Length in Inches	External Diameter Inches
			External	Internal			
1--	1.68	.133	1.315	1.049	11 1/2	1 7/8	1.556
1 1/4	2.28	.140	1.660	1.380	11 1/2	2 1/8	1.907
1 1/2	2.73	.145	1.950	1.610	11 1/2	2 3/8	2.218
2	3.68	.154	2.375	2.067	11 1/2	2 5/8	2.760
2 1/2	5.82	.203	2.875	2.469	8	2 7/8	3.276
3	7.62	.216	3.500	3.068	8	3 1/8	3.948
3 1/2	9.20	.226	4.000	3.548	8	3 5/8	4.531
4	10.89	.237	4.500	4.026	8	3 5/8	5.091
4 1/2	12.64	.247	5.000	4.506	8	4 1/8	5.591
5	14.81	.258	5.563	5.047	8	4 1/8	6.296
*6	19.18	.280	6.625	6.065	8	4 1/8	7.358
7	23.769	.301	7.625	7.023	8	4 1/8	8.358
8	25.00	.277	8.625	8.071	8	4 5/8	9.420
10	35.00	.307	10.750	10.136	8	6 1/8	11.721
12	45.00	.330	12.750	12.090	8	6 1/8	13.958
14 00	57.00	.375	14.000	13.250	8	7 1/8	15.446
15 00	61.15	.375	15.000	14.250	8	7 1/8	16.446
16 00	65.30	.375	16.000	15.250	8	7 1/8	17.446
17 00	73.20	.375	17.000	16.250	8	7 1/8	18.683
18 00	81.20	.375	18.000	17.250	8	7 1/8	19.921
20 00	90.00	.375	20.000	19.250	8	7 5/8	21.706

*6 17.00 .250 6.625 6.375 (also acceptable)

FIG. 1 CONSTRUCTION OF BEDROCK WELLS

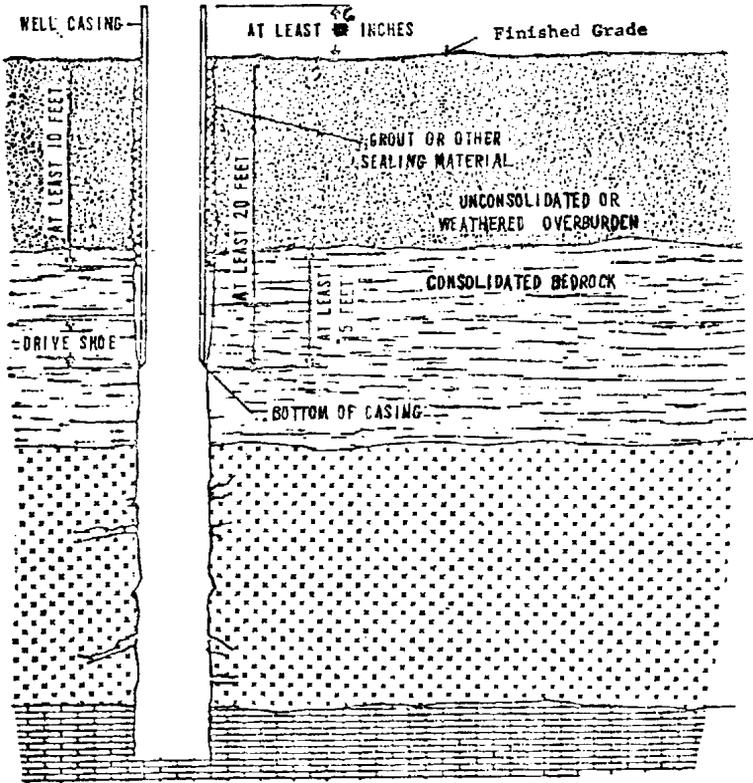


FIG. 2 CONSTRUCTION OF WELLS IN AQUIFERS WITH ALTERNATING BEDS OF SILT AND CLAY

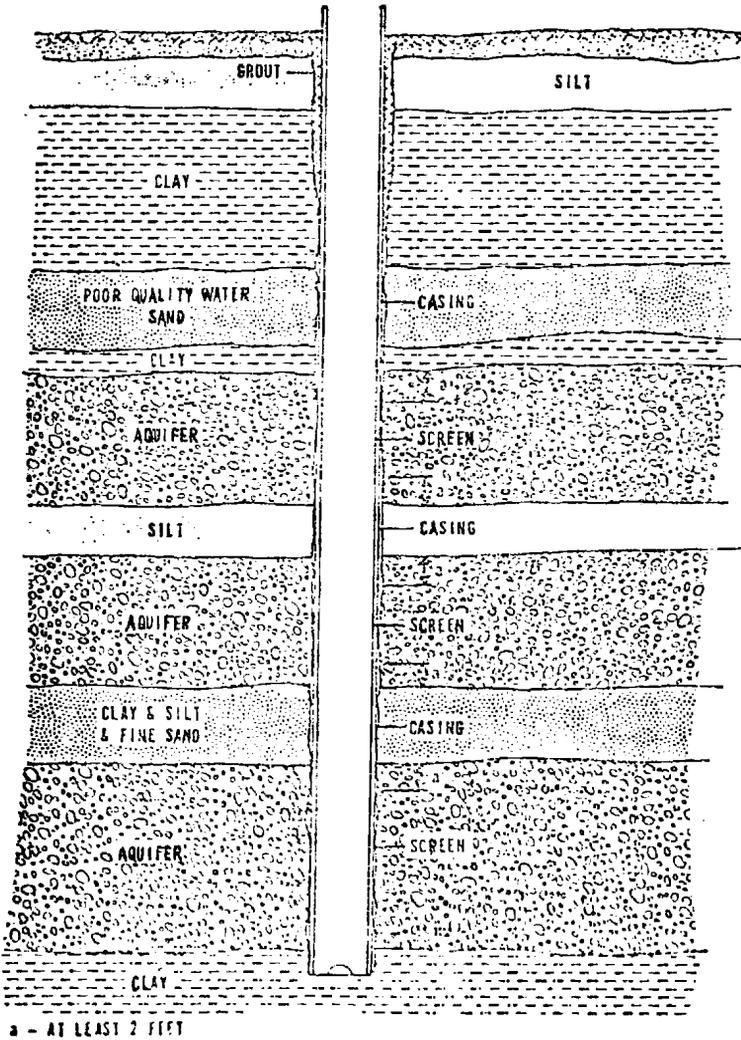


FIG. 3 CONSTRUCTION OF WELL IN AQUIFER OVERLAIN BY CLAY, SILT AND FINE SAND

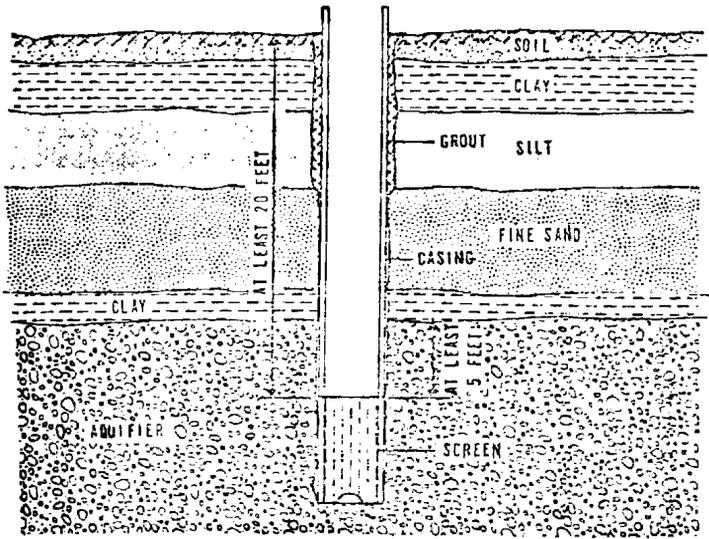


FIG. 4 CONSTRUCTION OF WELL IN AN AQUIFER OVERLAIN BY TILL

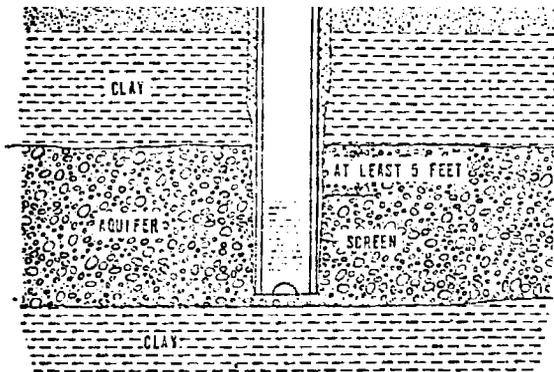


FIG. 5 CONSTRUCTION OF WELL IN AQUIFER OVERLAIN BY CLAY

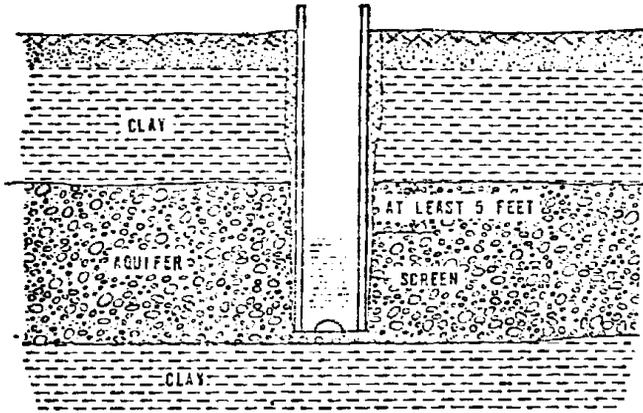


TABLE OF CONTENTS

Well Casing Extension

Contractor-limited to well casing extension W-5	25-129-1
Journeyman-limited to well casing extension W-6	25-129-2

Well Casing Extension

Sec. 25-129-1. Contractor-limited to well casing extension W-5

The requirements for the registration of a contractor-limited to well casing extension W-5 shall be a contractor's license to perform plumbing and piping work pursuant to chapter 393 of the Connecticut General Statutes. This registration permits the registrant to perform well casing extension, repair and maintenance work. The applicant shall demonstrate knowledge of well casing extension, repair and maintenance work by passing a written examination conducted pursuant to section 20-333 of the Connecticut General Statutes.

(Adopted effective June 28, 2004)

Sec. 25-129-2. Journeyperson-limited to well casing extension W-6

The requirements for the registration of a journeyperson-limited to well casing extension W-6 shall be a journeyperson's license to perform plumbing and piping work pursuant to chapter 393 of the Connecticut General Statutes. This registration permits the registrant to perform well casing extension, repair and maintenance work only while in the employ of a contractor licensed for such work. The applicant shall demonstrate knowledge of well casing extension, repair and maintenance work by passing a written examination conducted pursuant to section 20-333 of the Connecticut General Statutes.

(Adopted effective June 28, 2004)